

The SHIPPING WORLD



VOL. 145 No. 3562

15 NOVEMBER 1961

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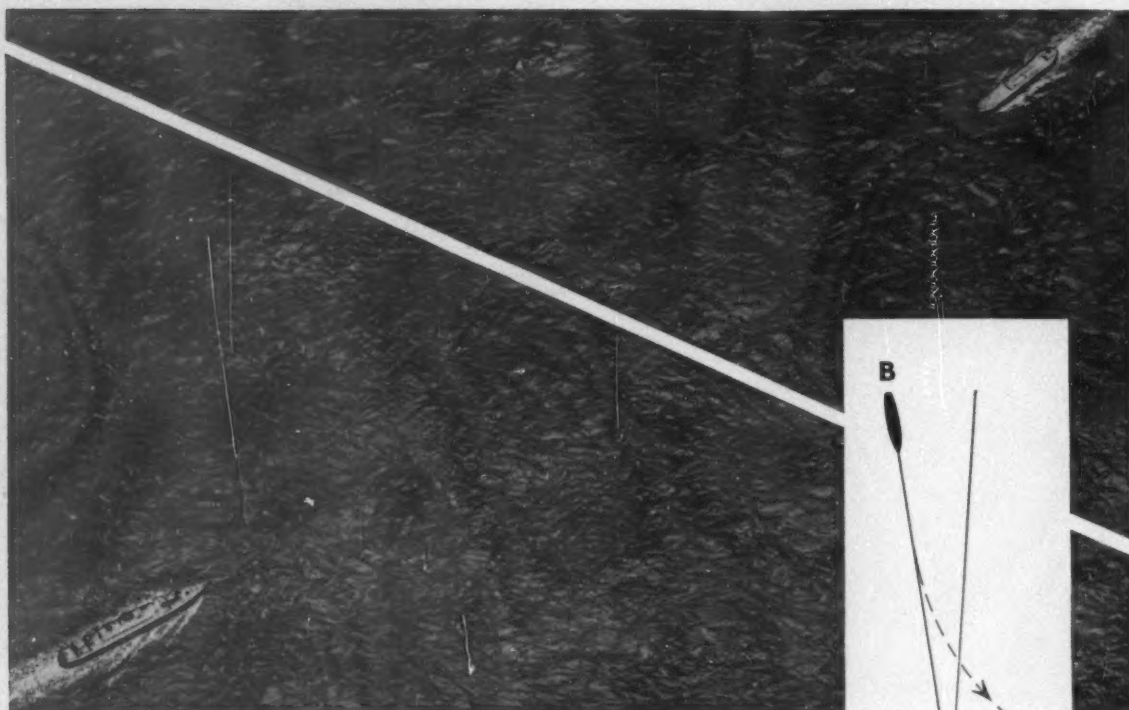


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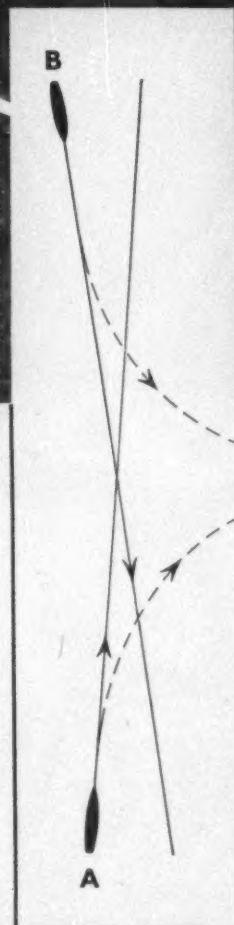
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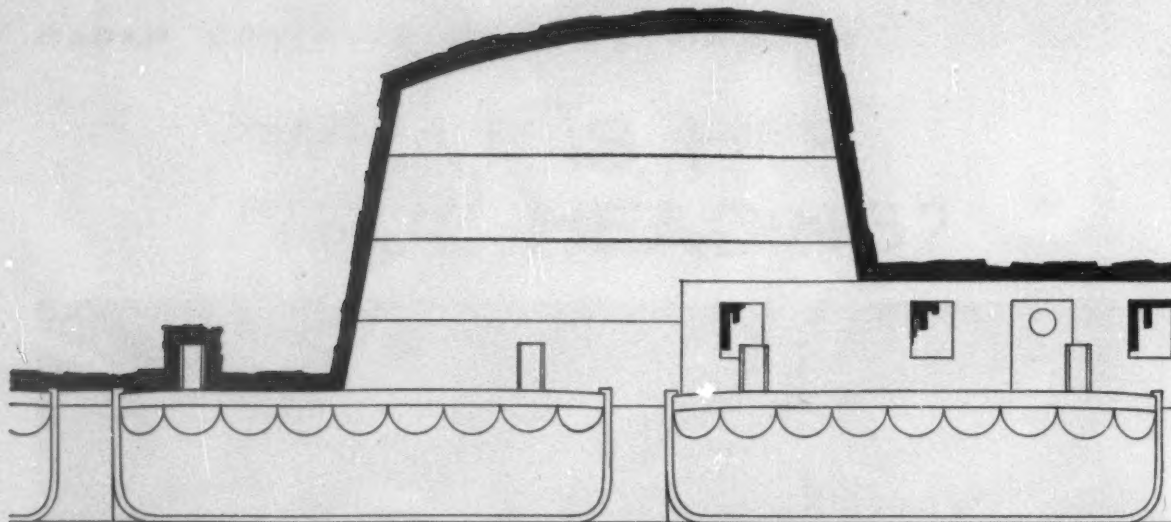
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The Carleton Restaurant, SS "Empress of Canada". Main lighting provided by cold cathode tubes in coves and laylights, supplemented by tungsten recessed ceiling fittings and hot cathode wall brackets. (Top left)

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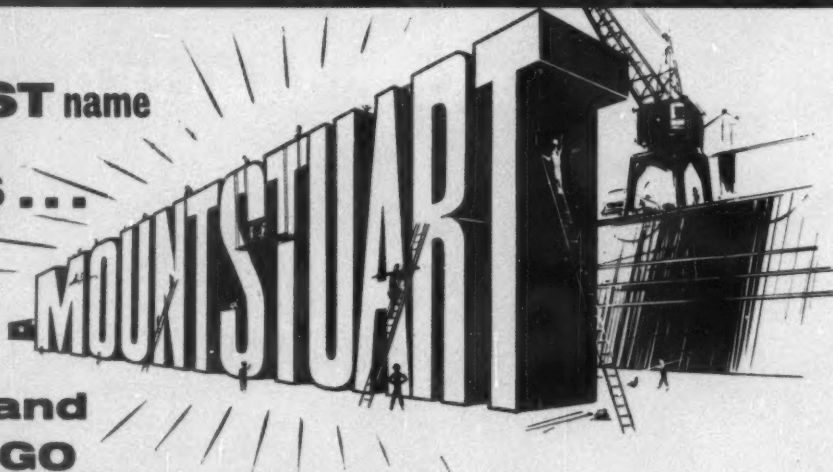


Main turbine of a naval frigate being repaired in Mazagon Dock.

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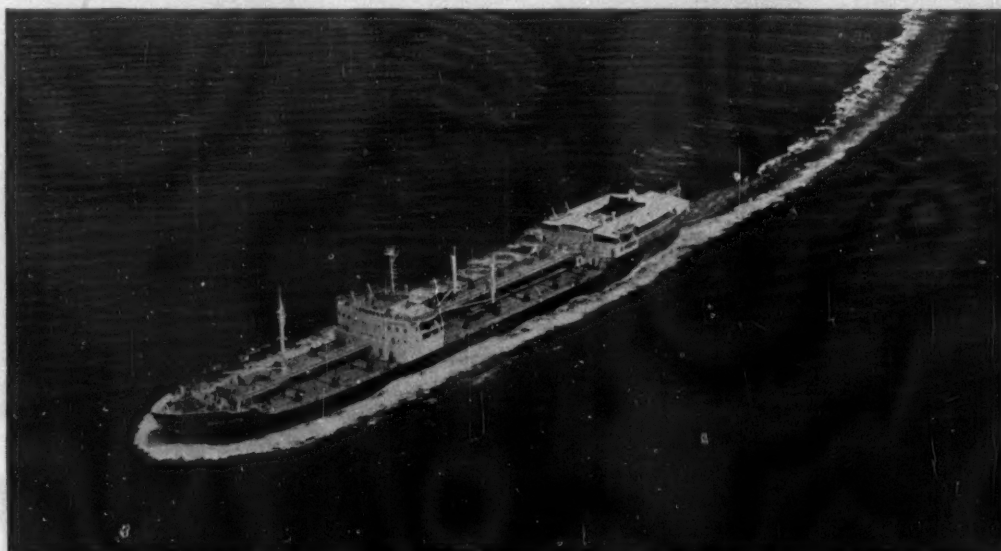
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Advertisement Manager: W. MURRAY

Annual Subscription £5

Offices: 127 Cheapside, London EC2

Telephone: Monarch 2801

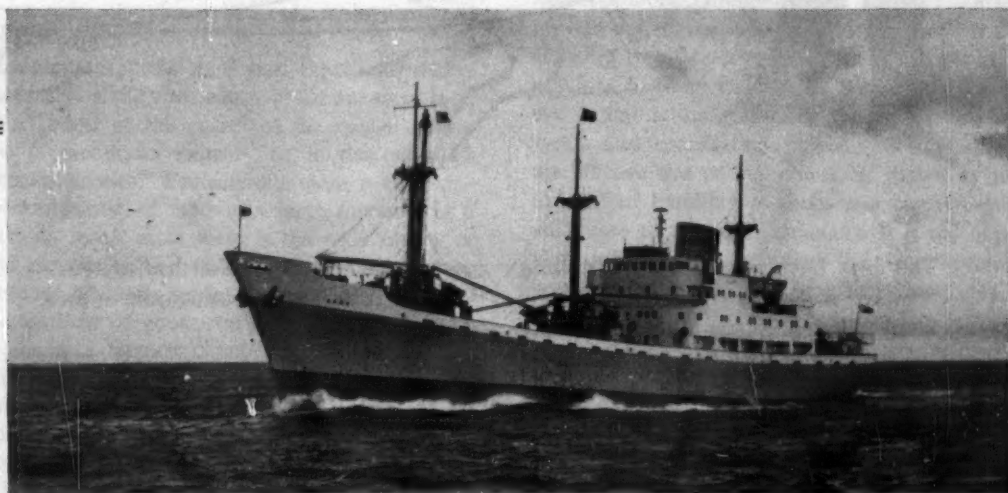
Telegrams: Shipping World, London

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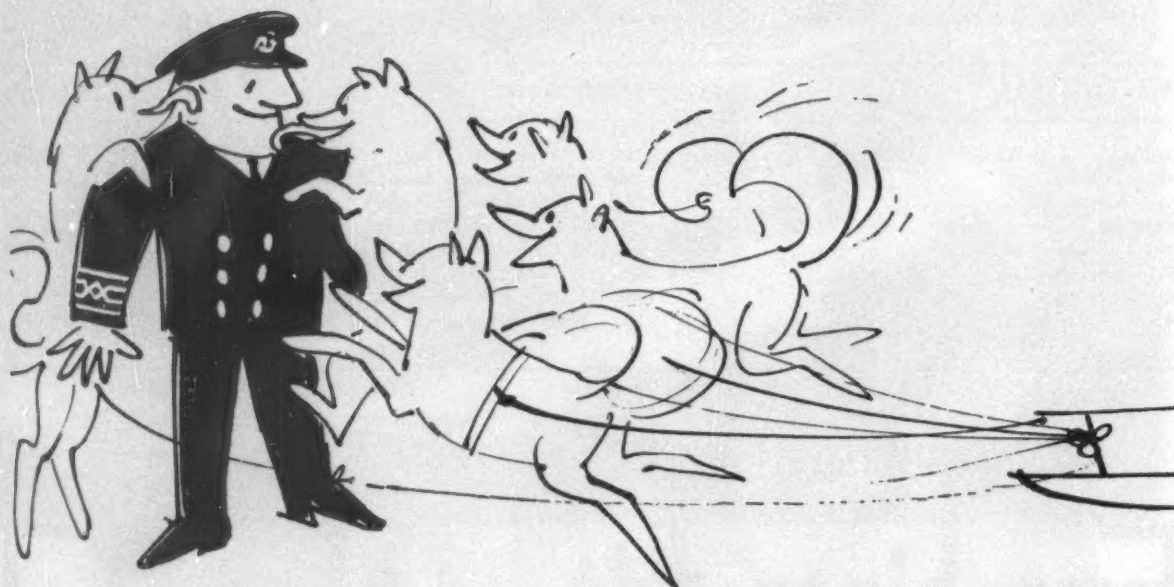
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Chief Engineers get off the beaten track



The days have passed when shipping companies had to route their vessels along the main sea-lanes, following resolutely the well-worn tracks from one port to another.

Nowadays Captains may have to tramp along the less familiar byways to pick up a waiting cargo, but they know that all over the world they will find ports with the most up-to-date bunkering facilities for ships of all sizes. Shell have provided this service in over 300

ports—wherever the need has arisen, whether it be in the Arctic circle or on a tropical island.

To captains of tramps with odd cargoes for odder places, to the crews of whaling ships or ocean-going tugs, the Shell bunkering sign at a harbour appears as a symbol of security.

Unbeaten tracks, in fact, hold no terrors today. Chief Engineers say that Shell have made them as familiar as the paths in their own back gardens.

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THE SHIPPING WORLD

REVOLUTION IN THE DOCKS

WHAT may prove to be revolutionary changes in relations in the dock labour industry were referred to last week by Mr A. J. M. M. Crichton in an address to the Society of Shipping Executives in London. Mr Crichton, who is a managing director of the P & O Steam Navigation Company and chairman of the National Association of Port Employers, is also joint chairman, with Mr Frank Cousins, the trade union leader, of the National Joint Council for the Port Transport Industry. As already reported in these columns, as a result of the serious tally clerks' strike last October and the subsequent dock strike in London last spring, the two sides of the National Joint Council determined that something should be done quickly to eradicate the causes of strikes in the docks. A Working Party was set up in June and its recommendations are now being studied by local joint committees, who must report back by the end of the year. The principal object of these recommendations is to remove, to the greatest extent possible and consistent with varying conditions at different ports, the casual basis of employment and all that goes with it.

Mr Crichton takes the view that the casual nature of employment is the root cause of labour trouble in the docks. "Most of the causes of the special labour problems in the docks industry lie in the industry's unique characteristics." For example there is an exceptional concentration of labour in large numbers in a comparatively small area; there is the wide variety of ships and cargoes to be handled; there is the urgency which attends all dock work. Unfortunately the ideal of a smooth flow of goods, on the analogy of a production line in a factory, cannot be achieved. As Mr Crichton put it: "With the best will in the world, just too many different spheres of activity require to be coordinated. So we tend to have in the docks the need for spasmodic speed, interspersed with delays, all overlaid with the demands of the individual interest—the shipowner for his ship, the importer for his goods, the road haulage contractor for his lorry." It is the casual form of employment, according to Mr Crichton, which

breeds the casual and opportunist state of mind, and it has done more than any other factor to encourage the docker's tendency to seek to exploit situations favourable to himself.

The diagnosis of casual employment as the main problem of the port industry has long been recognised. Major steps which have been taken to reduce its incidence are the restriction and control over the numbers in the labour force, and the institution of minimum "maintenance" payments to men for whom no work is available. But there still remains the unsolved element in the problem of decasualisation. "The weakness of our arrangements," said Mr Crichton, "is that although they have provided a basic security, have given greater regularity of employment and have mitigated the economic effects of the casual system, they have not brought about real regularity of either employment or earnings." The basis of engagement and employment for the majority of dockers is still casual. The benefits from the Dock Labour Scheme and high average earnings do not prevent wide fluctuations in the individual's earnings from week to week, and wide fluctuations in earnings between individuals. From this has followed the casual attitude towards the observance of agreements and conciliation procedures, militating against the efficient use of manpower, as shown by resistance to modern handling methods and mechanisation, and adherence to restrictive practices. It is the hope of the National Joint Council that the new "revolutionary" recommendations will achieve better regularity of earnings and induce the dockers to see the fatuity of restrictive practices that can only retard their wages, and to appreciate the value of mechanical aids which can only lighten their load and speed their earning power. As Mr Crichton put it: "We are working for a revolution, but a revolution in terms of two-way traffic, so that the interests of both sides can be advanced and a better service provided for the community. The grim alternative might be a deterioration for which we should all pay dearly."

Current Events

Lighters and Lightermen

THE Watermen, Lightermen, Tugmen & Bargemen's Union has submitted its report to the Rochdale Committee which is inquiring into the port transport industry and its problems. It is, of course, a sectional report, viewing the

subject with the section's main interests at heart; but it contains some eminently sensible points. It draws attention, for example, to the decline in the use of lighterage in the port of London, to the consequent increase in the congestion of road traffic on the approaches to and in

the docks. It is estimated that nearly half of the imports and exports passing through the port use lighterage services at some stage or other; whereas at one time the figures were in the region of 60 per cent for exports and 70 per cent for imports. It is contended that while more and more traffic is using the already highly congested thoroughfares through London, the greatest highway of all, the River Thames, is ignored. "It is our considered opinion that the situation is serious enough to warrant transit depots being established on the outskirts of the Metropolitan area which would be situated either on the banks of the river or the canals and would be serviced day and night by barges from the depots to the docks or vice versa." An efficient system of this type would certainly eliminate a great deal of the present wastage of road transport, through delays and congestion. The report attributes the delays experienced at the timber wharves mainly to inadequate facilities for discharge, sorting, storage and collection; but makes the useful suggestion that one of the most progressive steps the timber trade could make would be to organise themselves in such a manner that all, or at least most, of the timber imported should arrive pre-packed in packages or parcels weighing say 3 tons. The report ends up on the inevitable political platform by asserting that the major port problems will only be resolved "when there is an authority instituted by the Government which will coordinate the whole services of the port transport industry and organise the road, rail and water transport sections so that each will be performing the service it is most suited for and not operating on a purely individual company profit making basis." The profit motive, however, may persuade some enterprising companies to examine more closely some of the lightermen's suggestions.

No Nuclear Ship for Britain

THE GOVERNMENT'S decision not to build a nuclear ship at present has met with fairly general acceptance. There were, it is true, some protests in the House of Commons, but these came from members whose constituents might have expected to benefit from the order. In the past year there has been a gradual swing of opinion away from the nuclear ship project, as it became increasingly clear that the expenditure of a great deal of money on hardware at this stage might well serve merely to channel development work into a wrong direction. By a coincidence, the comment of one well qualified observer (the chief engineer surveyor of Lloyd's Register) was quoted in a leading article in *THE SHIPPING WORLD* last week. The gist of it was that none of the reactor designs in an advanced state of development showed any real promise for marine purposes, and in view of this it would be wiser to spend any money that is available on research to develop a more promising reactor system. This, as it now turns out, is exactly what the Government has decided to do; but approval of its decision must be qualified by insistence that the development work which is mentioned in the Government statement is in fact carried out. The statement says "the programme will be carried out by the Atomic Energy Authority in conjunction with industry". This certainly seems a definite enough pledge of Government support for research work, though it remains to be seen exactly what it means in financial terms.

Gas Turbines in the "Auris"

It is now ten years since the conversion of the Shell tanker *Auris* from diesel-electric to gas turbine propulsion was begun. The paper read yesterday before the Institute of Marine Engineers by R. M. Duggan and A. T. O. Howell dealt with the trials and operation of this vessel over this period, and portrayed the enthusiasm of the

authors for this prototype vessel, which was until not so very long ago very much in the news. The early history of this ship, which was originally powered by four diesel-electric units, is well known and she has been mentioned several times in *THE SHIPPING WORLD*. When the final conversion took place in 1959 and she entered commercial service powered by a single gas turbine, there was considerable speculation among shipowners as to how she would shape as a commercial proposition. Unfortunately the death of John Lamb, who was mainly responsible for the venture, occurred before the final conversion took place, so he was unable to further the project himself. After many rumours and hold-ups the *Auris* finally went out on trials, during which a considerable amount of valuable information was obtained, including knowledge gained from the testing of the prototype hydraulic reverse gear, now incorporated into new designs and rig tested by Pametrada. From what the authors say it would appear that designs for the next stage of gas turbine machinery show that instead of just breaking even with steam machinery of comparative power, they would be distinctly ahead, even with conservative temperatures. However, capital costs are too high on limited production and there seems no likelihood of this changing. When one hears of the difficulties which faced those who operated the *Auris* in her earlier days—apparently her diesels produced nearly every known defect and trouble including seven crankcase explosions, excessive liner and ring wear, vibration trouble, endless bearing failures and control difficulties—it is perhaps fortunate that she was used as a test bed for the gas turbine project, as on several occasions the single gas turbine unit with which she was first fitted was responsible for the safe return of the ship and her cargo. It is a pity, though, that she should now be laid up in the Blackwater.

Shipbuilding Productivity

SHIPBUILDING productivity in Britain could be improved by 15 per cent if every man in the industry worked harder and within his capacity and by 20 to 25 per cent given improved planning, better facilities and improved management, Mr James Lenaghan, managing director of the Fairfield Shipbuilding & Engineering Co Ltd, told the Glasgow Productivity Committee in Glasgow last week. He said that the whole field of labour relations in the shipbuilding industry required to be overhauled. There were still "tribal customs" in certain crafts and to remove these and other outmoded practices would require a major act of leadership on the part of both management and workers. The need was to design a pattern which would increase incentives to produce more and earn more. Mr Lenaghan said that shipbuilding had always been regarded as a piecework industry, especially in the iron trades. In recent years, however, little true piecework had been practised. Incentive payments had been introduced, but these tended to vary so much in their practice and precise application that they often led to disputes which had a serious disruptive effect on production. Until recently there had been little constructiveness in approach to wages by either management or workers. Price stability and full employment were possible but could be achieved only if wage increases were kept within the limits imposed by long-term productivity. Increases in payments beyond the growth of productivity were very quickly offset by price increases, making the improved wages of little value. If Britain joined the Common Market, as now seemed certain, the whole of British industry and shipbuilding in particular would need to pull up its socks. There should be more flexibility in the labour force and with this, and a new attitude to work, earnings in general could be improved substantially.

Future Hopes

THERE were signs that the shipbuilding industry was now working hard to overcome its alleged past shortcomings and Mr Lenaghan said he was confident that it would be able to hold its own against all comers. He criticised the recent adverse reports on the industry as being quite unfair and unrepresentative of what was happening. He saw a steadily narrowing gap between skilled, semi-skilled and unskilled labour as a continuing trend in the industry. The expanding use of mechanisation might well encourage a switch to other methods of payment, but both sides would require to get together and to work out solutions. He visualised external pressures as liable to force internal changes; other industries had shown the way and he cited the Swedish shipbuilding industry as an example of flexible efficient use of labour and equipment. Efforts in the past to make changes to the benefit of productivity had too often failed through the refusal of workers to accept changes, despite prior consultation, which he emphasised as being a necessary feature. The iron trades were particularly involved in this situation, having five or six divisions each negotiating separately without reference to the others. It was time to have one single trade within the ironworking sections so that operatives would be enabled to undertake any task within that field. The improved intake of intelligent apprentices held out hope for the future, but it was still true that shipbuilding was not making the most of its main asset of 100,000 very skilled workers.

Boatyard and Canal to Close

THE J. & J. Hay puffers are a familiar feature of the Clyde waters. Many of these were built in the company's boatyard at Kirkintilloch on the Forth and Clyde Canal, a considerable distance from the waters where they spent their lives. The company has now decided that the yard should close down after nearly 100 years and the 30 employees have been advised to that effect. Recent activity has been mainly on the maintenance of the fleet; but at one time the yard turned out one puffer each year, the last new construction being the *Chindit*. Coincidental with this decision is the news that the Secretary of State for Scotland has now approved the closing of the Canal as a waterway. This was foreshadowed some time ago, despite objections from the East Coast fishing fleets which use the Canal to reach the West Coast waters. The volume of traffic on the Canal has been declining steadily while maintenance and staff have been costing more. Industrial water is drawn from the canal by a great many concerns along the bank so that it will continue to function as a water source, although its days as an integral highway are now numbered.

Egalite, Fraternite—and "Liberte"

WHEN the former Norddeutscher Lloyd liner *Europa* fell into the hands of the French as a prize of war, it was natural that after her renovation she should be renamed *Liberte*, a word which has special significance for the French and of which the most adequate English translation is "Freedom," despite the fact that near the entrance to New York Harbour there is a statue known the world over as the Statue of Liberty. It is one of the most unfortunate etymological difficulties that the Anglo-Saxon words "liberty" and "freedom" should have divergent meanings. In Britain the word "freedom" carries with it the sense that there is no restriction on one's activities. The word "liberty" seems to imply that one must have a licence to perform something which would otherwise be considered either illegal or not quite *de rigueur*. Such an apparently slight difference between the emphasis placed on the meaning of two words of similar concep-

tion underlines the difficulty of achieving the communication of ideas between one nation and another, however close their basic ties may be. In the trans-Atlantic passenger trade, as in all other shipping trades, British shipowners, since the repeal of the Navigation Acts over 100 years ago, have preferred the idea of "freedom to compete" rather than the idea of "liberty to operate." The French Line's new passenger ship *France*, which will replace the ex-German *Liberte*, is aptly named. It represents the prestige of the country whose flag it flies. It replaces *Liberte* but not "freedom." No ship which is heavily subsidised can be operated in complete freedom.

Claims for Injury to Stevedores

A FREQUENT problem faced by the owners of vessels in trade to ports of the United States arises out of liability in respect of injury suffered by stevedores during the loading or discharging of cargo. In certain circumstances the owner may recover from the stevedoring contractor any payments he may be compelled by law to award such injured parties, but in a case recently before the United States Court of Appeal the stevedoring contractor submitted that as the shipowner had settled the claim of the injured stevedore out of Court there was no evidence that the shipowner was in fact responsible in law, and that therefore the claim against the man's employers by the shipowner could not be supported. The Court however made the interesting ruling that the shipowner need only establish his potential liability in order to recover from the contractor, and in this particular case (*California Stevedore Corp'n. v Pan-Atlantic S.S. Corp'n.*) the Court ruled that the owners had established that there existed a potential, although not proven liability, and that they were therefore entitled to recover the sum paid to the injured stevedore under the terms of the contract of indemnity.

EXPORT SHIP FROM WEAR

The bulk carrier "*Atomena*", 22,310 dwt, has been completed by Sir James Laing & Sons Ltd for the Swedish owners Nordstrom & Thulin A.B. The ship is powered by a N.E.M.-Gotaverken diesel engine. A ship of the same name was built by Laings for these owners in 1956, but was subsequently sold. Although in size and characteristics the new ship is not unlike her predecessor, it may be remarked that whereas the first "*Atomena*" had a bridge amidships, in the new ship it is aft



ON THE "BALTIC"

WEAKER TENDENCY IN FREIGHT RATES

By BALTRADER

THE generally weaker tendency continues on the freight markets and with tonnage in plentiful supply in most parts of the world there is no obvious reason why this state of affairs should not continue for a while. Nevertheless, any serious fall in rates seems unlikely at this time of the year and, in fact, the last weeks in November and first weeks in December usually prove to be a fairly healthy time for shipowners. Over the Christmas/New Year holiday period, however, the markets tend to become somewhat erratic, but by the end of the first week in January there is usually a return to more stable conditions.

Although the oil tanker market generally livens up at this time of the year there have been no signs of this happening yet, and consequently the dry-cargo trades continue to bear the full brunt of the grain-carrying tanker invasion. Even if oil inquiry does pick up in the near future, owners will hesitate to switch grain-carrying tankers to oil until they are really sure that the increased activity has come to stay. Too many remember this time last year when the oil trades improved enormously, only to slump back again immediately after Christmas.

The carriage of grain is the most important task of the tramp ship, and 1961 has been a very busy year in this respect, but one or two recent news items raise doubts as to whether this activity will be repeated on the same scale next year. First of all came reports from Canada that drought conditions in that country have had a disastrous effect on the recent harvest and that the total grain crop will not be much in excess of half of last year's figure. No doubt Canada still has a very large surplus carried over from previous years, but with such a big cut in stocks she is unlikely to be as keen a seller on the world's markets as has been the case this year. Australia too has had serious drought problems, and it has been suggested that her exportable surplus over the next twelve months may be reduced by as much as one-third compared with this year. Whatever the final result may be it seems clear that South Australia has been the worst affected, and that there will be much less barley available for export. Any reduction in Australian exports is bad for shipping because the long haul from Australia to all destinations, especially Europe, keeps tonnage off the market for the maximum amount of time.

Sales Tax Removed

An encouraging piece of grain news is the fact that after a long dull period the River Plate market has sprung into life. Apparently this is due to the recent lifting of an export sales tax which has made Argentine grain more competitive, but whether the immediate activity which followed this move will be maintained remains to be seen. Apparently the Argentine has had a good wheat crop and this will be moving from December/January onwards, but maize does not come forward until three or four months later. Current rates from the River Plate may attract ballast from Europe, but in any case a fair number of ships are committed to the area with inward cargoes such as coal to the Argentine and Brazil as well as American grain, also to Brazil.

Japan continues to feature regularly in the fixture lists as a destination for bulk cargoes from all parts of the world, but nevertheless there has been considerably less activity in that direction in recent weeks. This is said to be due to lack of currency, which is hardly surprising in view of the volume of cargo carried to Japan in the first

six months of the year, but it may eventually result in an easing of the congestion in Japanese ports. Not only has the serious delay to shipping in Japan in recent months had a firming effect on all the world's markets, but it has also cost Japan a great deal of money in the shape of higher rates, as well as an enormous demurrage bill. Urgent steps are being taken, with Government backing, to increase the number of lighters in Japanese ports as well as to attract more labour to the ports.

The Freight Markets

There were further signs of weakness in a number of directions last week. In the trans-Atlantic grain trades fixtures included a vessel with heavy grain from the St Lawrence to Genoa at \$6.50 free discharge, November 20/30, and the *Alkaid* with a similar cargo from Chicago and Milwaukee to Liverpool-Birkenhead at 91s, November 13/23. The *Effie II* takes wheat from the St Lawrence to Albania at 60s f.i.o., November 10/30, and the *Okeanis* a similar cargo from Halifax to the U.K. at 47s 6d, December 8/27. The *Irish Spruce* was fixed with heavy grain from the U.S. North of Hatteras to West Coast U.K., excluding Manchester, at 52s 6d, December 15/28, and the *Sils* takes wheat from the U.S. Gulf to Brazil at \$8.50, November 20/December 5. Tanker fixtures included *Hornblower* with heavy grain from the U.S. Gulf to Antwerp, Rotterdam or Amsterdam at \$4.95 f.i.o., December 1/15. Eastwards, tonnage was fixed with heavy grain from the U.S. Gulf to Japan including *Atlantic Empress* at \$11 free discharge, November 13/17.

There was no change in scrap rates paid to Japan and fixtures included *Antibes*, 9,500 dwt for cargo, 475,000 cu ft bale, from the U.S. Atlantic at \$140,000 f.i.o., December 5/23. The American M.S.T.S. took further prompt tonnage for the voyage across the North Atlantic including *Devon*, 13,500 dwt for cargo, 705,000 cu ft bale, at \$95,000 f.i.o. for general cargo from the U.S. Atlantic to U.K./Continent, spot loading. It was believed that two early ships had been fixed with sugar from Cuba to North Korea at the high rate of 112s f.i.o. and free taxes.

There was considerably more activity on the River Plate market and fixtures included *Aguante* with heavy grain to Antwerp/Hamburg range at 72s 6d, option U.K. discharge at 77s 6d, limited clause 6, February 1/March 15.

On the Australian market the *Zarathustra* was fixed with bulk barley ex bags from South Australia/Victoria to Rotterdam or Amsterdam at 10s, option Ardrossan loading at 12s 6d less, January 1/25, and the *Eptanissos* takes bulk wheat ex silo from West Australia to the U.K. at 77s 6d, option London at 75s, Antwerp/Hamburg range at 72s 6d, December 7/20. A vessel was fixed with bulk sugar ex bags from Fiji to the U.K. at 90s, option discharging Antwerp, Rotterdam or Amsterdam at 87s 6d, December 11/31. On the North Pacific market fixtures included *Ionian Islander* with wheat to Japan at \$6.50 free discharge, December 16/31, and the *Aghia Marina* was fixed with wheat from British Columbia to the U.K. at 67s, option 5,000 tons flaxseed at 2s 6d extra, December 15/January 5.

Timecharter fixtures included a Liberty type ship, 10,890 dwt, 499,000 cu ft bale, 10/10½ knots on 26/27 tons oil, for 5/7 months trading at 16s 1d per ton, delivery off Singapore, redelivery India/Japan range, December 9/27.

Conveyor System for Plates*

METHOD ADOPTED IN JAPANESE SHIPYARD

By Dr Yutaka Matsuyama

THE increase in the use of flame-cutting processes, as well as the change in the flow of work resulting from the extensive use of welded construction in shipbuilding, made it extremely difficult for us to cope with the greatly increased amount of work brought about by the building of larger sized vessels. Nor was it possible to improve production efficiency any further, with the then existing shop arrangement, and we therefore set up a plan for the rearrangement of the shop in the following manner:

- (i) Shop space was to be curtailed as far as possible, allowing no dead space to exist, and its arrangement was to be made suitable for continuous production and operation.
- (ii) Machines were to be compactly arranged in one place as far as possible, letting the materials go through them. As the production system does not require much processing with large machines, scattered positioning of large machines on spacious ground would be unnecessary.
- (iii) To ensure uninterrupted processing, materials were to be made to flow along systematically organised routes according to the kind and amount of processes.
- (iv) A suitable conveyor system was to be adopted to avoid, as far as possible, the use of overhead cranes.
- (v) From the viewpoint of controlling work schedules and production improvements, stagnation in the flow of materials should be minimised by decreasing the rate of movement at any stage, by ensuring uninterrupted operations, and by establishing a systematised flow of materials from their entry into the shop throughout the entire production.

On the basis of these principles, a conveyor system, or manipulator system using conveyors, seemed to be the most suitable that would satisfy the requirements. In adopting either of these systems, it is necessary to secure a balance between flexibility and continuity of work progress.

The first step to be taken was to analyse the different production lines and then to systematically group them.

* Abstracts of a paper read at the recent symposium on Welding in Shipbuilding, held in London. Dr Matsuyama is with Ishikawajima-Harima Heavy Industries Co Ltd, Tokyo.

Then, by estimating how much work was to be done along these lines, the most appropriate system was selected for each line.

In addition, it was necessary to ascertain the possibility of doing work on both stationary and moving conveyors and to decide what type of conveyor would be most suitable.

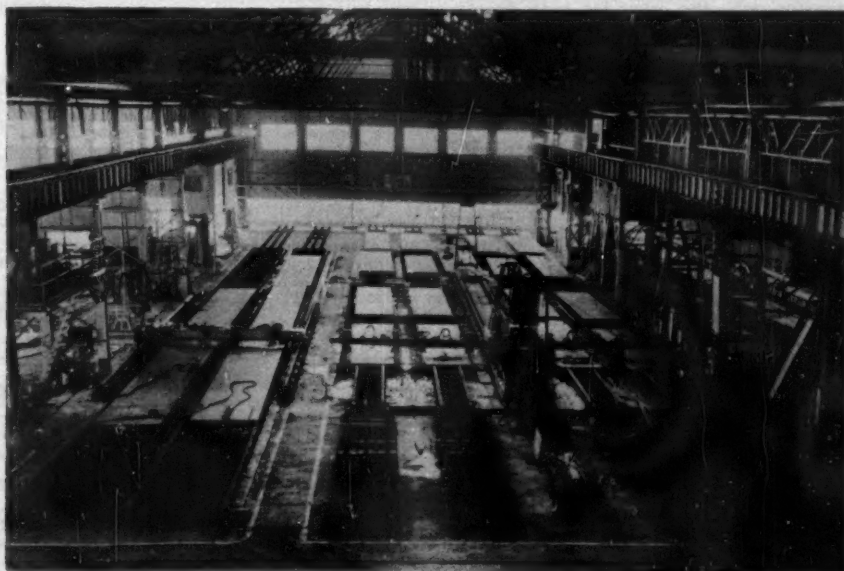
The various processes done in the plate shop, which are hereafter called production lines, can be divided into approximately 30 types, and the work involved is analysed as follows:

- | | |
|---|-----|
| (1) Materials subjected to shot-blasting machine ... | SB |
| (2) Those not subjected to shot-blasting machine ... | NS |
| (3) Those subjected to straightening rolls SR1 ... | SR1 |
| (4) Those subjected to straightening rolls SR2 ... | SR2 |
| (5) Materials cut to size with flame-planer, without using templates or battens ... | N |
| (6) Materials cut by flame-planer, excepting above N ... | A |
| (7) Materials bent in bending rolls or hydraulic press or joggled ... | M1 |
| (8) Plates joined by welding ... | M2 |
| (9) Where jobs consist mainly of sub-assemblies ... | B |
| (10) Where jobs consist mainly of parallel cutting, such as face plates ... | F |
| (11) Materials requiring flanging, such as longitudinal stiffeners ... | L1 |
| (12) Those requiring sub-assembly, such as longitudinal stiffeners ... | L2 |
| (13) Those subjected to 'Unigraph' machine ... | U |
| (14) Thin plates under 5 mm thick ... | T |
| (15) Beds for auxiliary machinery ... | H |

Of the above, SB, NS, SR1 and SR2 belong to the 1st stage, which is a quite simple production stage, and all steel plates go through the combination of the 4 types of process.

The 2nd stage consists of marking and gas cutting, which includes a variety of processes. This stage was analysed and grouped as follows:

- (1) N, A and M2 form one line
- (2) M, L1 form one line
- (3) B forms one line



The new layout of the plate shop

- (4) L2, F and T form one line
- (5) U forms one line
- (6) Materials for H are mostly taken from off-cuts, and are therefore considered separately.
- (7) For section materials, a parallel edge cutter, parallel shape cutter, and end cutter are required according to the processes involved; thereafter, some go to the angle straightener while others go to the section bender. As edge cutting is applied only to bent materials, the section can be divided into two lines; namely, the bent material line equipped with an edge cutting machine, and the straight material line.

As a result of the foregoing analysis, the 2nd stage was classified into five lines for steel plates, and into two lines for sections. Materials, gas cut in the 2nd stage, take two different routes; some are taken out of the shop without any further processing, while others undergo mechanical processing or sub-assembly.

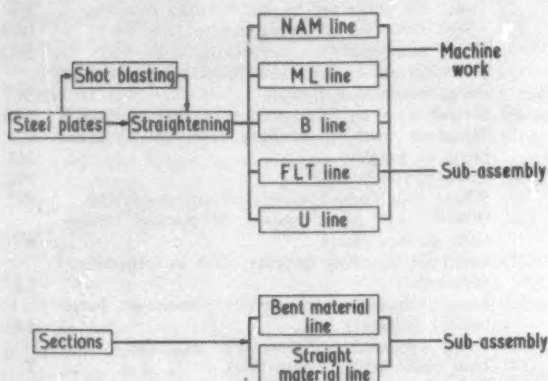


FIG 1. Systematised production lines

These form the 3rd stage, and its combination with the 2nd stage comprises two groups; items A, M1 and L1 proceed to mechanical processing while items B, F, L2 and U proceed to sub-assembly. From the foregoing, the production lines along which materials flow were arranged as shown in Fig 1.

In choosing conveyor systems most suitable for the respective lines, two examples will be considered, one for transfer only, the other for both operation and transfer.

Both moving and stationary conveyors are considered as systems, and roller, chain and belt conveyors as types.

Where comparatively speedy transfer is required, the roller conveyor is most suitable, though vertical or horizontal vibration might occur. Where smooth transit, as if in a motionless condition, is required instead of speed, the chain conveyor will be suitable. For stationary operation, either the roller or the chain conveyor will do, the main requirement being their suitability for use as working beds. The jobs involved in each line are classified into the following three kinds:

- (1) Where work on the material accompanies the movement
- (2) Where it can be done while the material is moving
- (3) Where the material needs to be stationary.

1st Stage

The major role is played by the conveying equipment that carries steel material between the shot-blasting machine and the straightening rolls rather than by the machines themselves; this stage therefore belongs to category (1), where jobs can be done in the conveyor system, only if a roller conveyor is used.

For section materials also, either a roller conveyor or a chain conveyor will be satisfactory.

2nd Stage

N, A, M2 lines

Material N does not require marking whereas A material requires quite complicated marking. This can be done while the conveyor is in motion, but as the subsequent process of gas cutting, in which the flame planer is used, requires high precision, it would be preferable to do the work in a stationary condition. The chain conveyor will thus be more suitable.

M1, L1 lines

Here, much parallel cutting is performed. Although the precision required is not so high as for N, A lines, a special planer was fitted to perform the stationary operation. In this way, a chain conveyor was adopted for these lines as for N, A lines.

B line

On this line, materials for small parts are marked and cut, using fully automatic gas-cutting machines on the conveyor; therefore, a moving-operation type conveyor was adopted.

As any minute vibration of the plate in motion would affect precision and surface finish the rate of movement had to be limited. At the same time the speed had to be within a range in which the workers would not be conscious of the movement. For this line, a chain conveyor was adopted, with its width made large enough and its frame space small enough to allow cutting of small parts.

F, L2 lines

On these lines, which resemble L1, parallel cutting of flat bars is frequent. Although cutting in motion is also carried out, a chain conveyor was adopted, considering the work as stationary operations.

U lines

Here, the work being of the stationary type, a chain conveyor was adopted.

Section line

Considering the bent material line as a moving operation type, a chain conveyor was adopted, with parallel edge cutter installed. For the straight material line, a parallel shape cutter was fitted, and considering it as a stationary type, a chain conveyor was adopted. This conveyor is connected directly to the angle straightening machine. The foregoing arrangements are summarised in Fig 2.

(Continued on page 385)

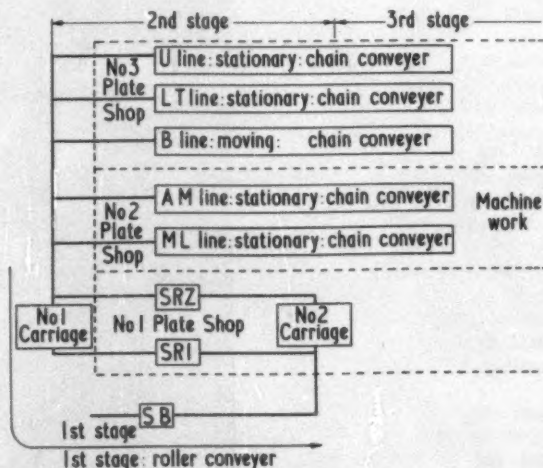
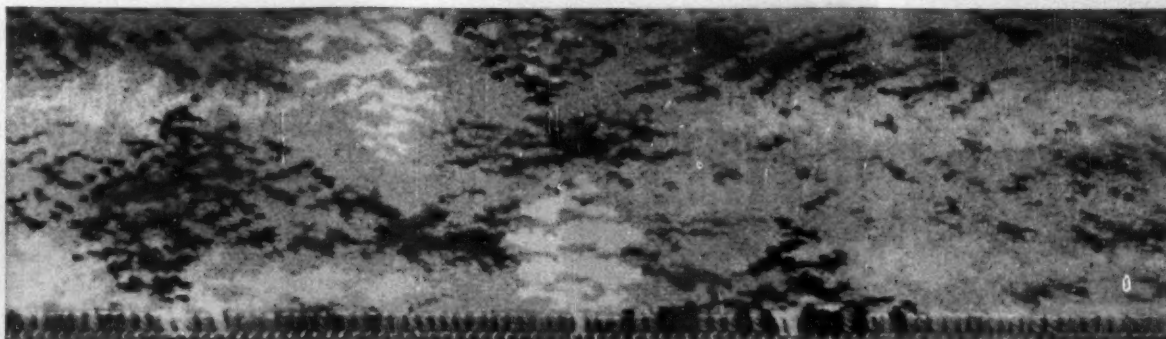


FIG 2. Conveyor and transfer diagram



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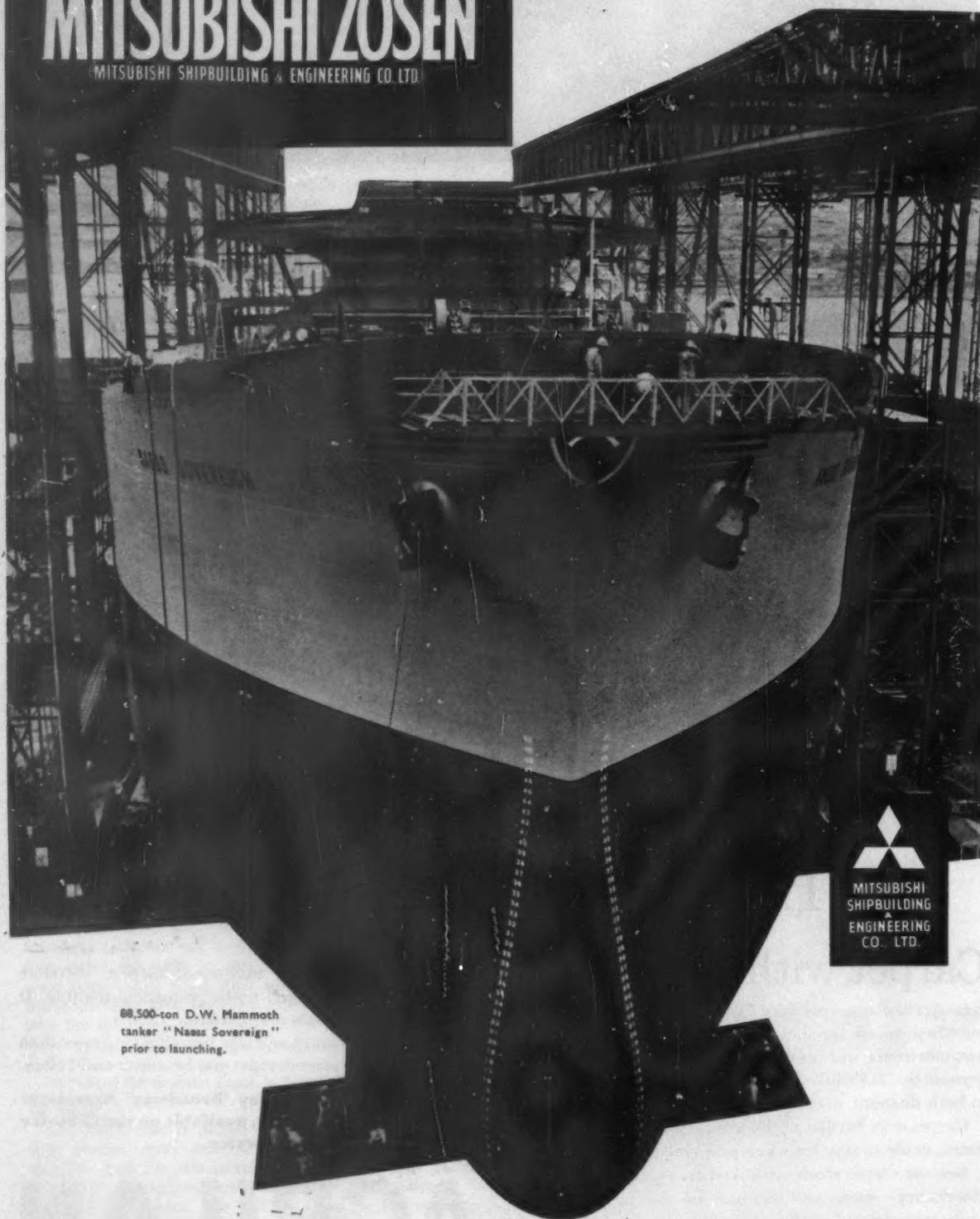
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NEWS FROM OVERSEAS

From THE SHIPPING WORLD'S Own Correspondents

Higher Japanese Earnings, but No Dividends

MOST Japanese shipping and shipbuilding companies are expected to show an increase in earnings for the first half of the 1961 fiscal year, which ended on 30 September, over those for the previous six months. However few, if any, shipping companies are expected to declare a dividend. An N.Y.K. statement shows a pre-depreciation profit of Yen 2,335 mn. No dividend is planned, the total amount being appropriated for depreciation. Earnings are given as Yen 16,247 mn from shipping, Yen 15 mn from warehousing, and Yen 1,431 mn from other sources; and expenditure as Yen 11,979 mn for shipping, Yen 957 mn for administration and Yen 1,212 mn for other activities. The Hitachi Shipbuilding & Engineering Co Ltd reported total earnings of Yen 20,510 mn, an increase of over Yen 383 mn on the total for the previous term. The net profit, however, dropped from the Yen 2,031 mn of the preceding half-year to Yen 1,772 mn. It was stated that a dividend of 12 per cent would be announced.

Swedish Shipbuilding Orders

THE TOTAL of orders in hand at Swedish yards, including ships under construction, amounts to about 2.5 mn tons gross. Mr Walter Vollert, managing director of the Association of Swedish Shipyards, gives this figure in an article in the Stockholm financial weekly *Finanstidningen*. Compared with an annual production of about 800,000 tons gross this means a comparatively satisfactory reserve of orders. The output of Swedish yards is dominated by tankers, which constitute about 65 per cent of the total. Dry-cargo ships account for 20 per cent and bulk carriers for 13 per cent, the remainder being sundry minor vessels. The value of the production of the Swedish yards in 1960 was Kr 1,675 mn (£115,500,000), including Kr 1,380 mn for new construction, Kr 120 mn for repairs, Kr 15 mn for naval ships and Kr 160 mn for other kinds of production, including diesel engines. Out of the total value, Kr 850 mn was export business, which corresponds to 6.5 per cent of Sweden's overall exports. The author states that no signs of an end to the shipping lull are as yet discernible, but by means of rationalisation, research and standardisation it may be possible for the Swedish

yards to pass through the depression without being hit by such crises as have afflicted the industry in other major shipbuilding nations.

Progress with Israeli Yard

ISRAEL SHIPYARDS LTD, at present engaged in the construction of its Haifa Bay shipyard, is a State-owned company, under the guidance of the Ministry of Transport. Participating with an 8 per cent interest in this industrial undertaking is N.V. Koninkl. Maatschappij de Schelde, which in return supplies technical data and experts for the construction and running-in of the shipyard. Situated in Kishon Harbour, the yard will be the first of its kind in Israel. In view of the variety of problems involved, the yard will be built in stages, the first of which to cost £16.5 mn and due for completion in the course of 1962. It is expected that installations will be ready in May for the construction of a merchant vessel of about 3,000 dwt and that repair work on ships will begin in the shipyard by the end of next year. The annual output of new construction should amount to some 25,000 dwt, with up to about 500,000 dwt of ship repairs, in the initial stage of the shipyard's programme. Work on this project was begun jointly in January last by the Haifa firm National Engineering Company and the British company of Edmund Nuttall, both of which are at present preparing the quay walls and building shops and stores, while Israel's leading contractors, the Solel Boneh firm, are carrying out the major dredging job to provide the basin of the yard with the required depth.

Passenger Liners to Miss Colombo

PASSENGER LINERS are cutting down their visits to Colombo. Official sources in Ceylon have said that owners of such liners had found that it was not worth their while to call. There was insufficient passenger traffic to warrant their coming to Colombo due to bills for port dues, berthing and high fuel costs. In the past, some liners made it a practice to pick up sizeable quantities of cargo at Colombo. Now, due to poor conditions in the port and the slow handling of cargoes, together with the high rates of overtime for dockers, fewer ships take cargoes from

HALF-SHIP LAUNCHED

The stern half of a 26,000-dwt upper lake bulk carrier for the Papachristidis Co Ltd entering the water from a covered berth at Canadian Vickers Ltd, Montreal. The forward half of the ship is being built at the yard of George T. Davie Co, Lauzon, a subsidiary company of Canadian Vickers, and the two halves will be joined in the Government-owned Champlain Dry Dock at Lauzon before being towed to Montreal for fitting out during the winter. The ship, named "Montrealer", is due for delivery in May. She will have an overall length of 730ft and beam of 75ft, both dimensions being the largest that the St Lawrence Seaways locks can accommodate.





NEW "JL" CARGO/PASSENGER SHIP

The "Nella Dan", latest addition to the fleet of J. Lauritzen of Copenhagen, is a multi-purpose vessel. Built by Aalborg Vaerft she is designed to carry 12 or 42 passengers, has all the special features the owners have developed for vessels serving in Arctic waters, including a crow's nest on the foremast with duplicate navigation controls, is equipped with two heavy derricks, one of 25 tons and one of 35 tons, besides 10-tons derricks, and has a helicopter landing stage of 1,075 sq ft above the aftermost deckhouse. She also has two refrigerated holds totalling about 3,400 cu ft, special deep tanks along her sides and a propeller with reversible blades. With 12 passengers the deadweight is 2,200 tons on a draught of 21ft 7in. Overall length is 246ft 8in. Her main engine is a B. & W. turbocharged diesel developing a maximum of 2,520 ihp

Colombo. It is believed that from next year liners will reduce their calls at Colombo by approximately 40 per cent. A monthly average of seven to eight passenger liners call at Colombo at present. From next year only four or five will call. Congestion in Colombo harbour has recently led to the Port Cargo Corporation diverting some food ships to Galle and Trincomalee. In the last week of October there were seven food ships among a total of 12 vessels outside the harbour.

Largest South American-built Ship

THE largest ocean vessel ever built in a South American shipyard, the *Henrique Lage*, has been launched at the new Brazilian yard Verolme Estaleiros Reunidos do Brazil, a subsidiary of Verolme United Shipyards, Rotterdam. The ceremony took place in the presence of the Brazilian President, Joao Goulart, whose wife, Dona Maria Theresa Goulart, named the ship. Built for the Brazilian Maritime Commission, the *Henrique Lage* will be operated by Lloyd Brasileiro. A cargo liner, the new vessel is of 10,500 tons deadweight and will have a speed of 18½ knots. The president of the yard, Mr Cornelius Verolme, was present at this initial launching from the Brazil shipyard, which is the largest in South America. Construction of the shipyard, on the swampy shore of the Bay of Jacuacanga south of Rio de Janeiro, commenced in February 1959. It already has 600 trained Brazilian shipyard workers and 120 Dutch technicians. The overall length of the *Henrique Lage* is 510ft, breadth 64ft, and the draught 27ft 1in and depth to the maindeck is 31ft 1in. The ship has a cargo capacity of 670,000 cu ft (grain). It is propelled by a 10,000-shp General Electric steam turbine installation, built under licence by Verolme Engineering Works in IJsselmonde, Holland.

Japanese Shipping Notes

THE Trans-Pacific Freight Conference of Japan and the Japan-Atlantic & Gulf Freight Conference plan to adopt in April or May next year the dual-rate exclusive-patronage system prescribed by the newly revised U.S. Shipping Act, according to Yoshiya Ariyoshi, vice-

president, Nippon Yusen Kaisha. Mr Ariyoshi disclosed this on his return from Ojai Valley, California, where the two conferences held meetings from October 8 to 13. He said that the two conferences also had decided to strengthen their so-called "neutral bodies," which act as watchdogs against malpractices by member lines, and to further their cargo pooling plans.

Yamashita Kisen plans to inaugurate a Yokohama-Los Angeles liner service with the sailing of the 12,600-dwt *Yamaaki Maru* from Yokohama on November 17. The schedule calls for the Pacific crossing to be made in ten days. Under the previous schedule, the company's vessels called at San Francisco before proceeding to Los Angeles. Daido Kaiun also announced that it would resume its Japan-Central America and Caribbean cargo liner service with sailing of the *Koten Maru* from Yokohama on November 15.

The first of four cargo liners specially designed for the St Lawrence Seaway passage is due to be completed at the Tamano yard of the Mitsui Shipbuilding & Engineering Co Ltd late in November. This is the 9,350-dwt *Kinkazan Maru*. Under construction for the Mitsui Steamship Co, she is nearly 3,000 dwt smaller than the Japanese liners employed in the Japan-New York service, but the company plans to assign her to this service until the St Lawrence Seaway reopens next year. A 12,000-bhp Mitsui-B & W 874VT 2BF-160 diesel main engine will give the liner a service speed of 18.1 knots.

A contract for the first LPG tankers to be built in Japan for export has been formally approved by the Ministry of Transportation. The contract is for three 3,900-grt LPG tankers ordered by Petroleo Brasileiro S.A., of Brazil, from the Fujinagata Shipbuilding Co. It calls for the first to be laid down in April 1962 and completed in mid-January 1963, the second to be laid down in August 1962 and completed in mid-March 1963, and the third to be laid down in November 1962 and completed in mid-May 1963.

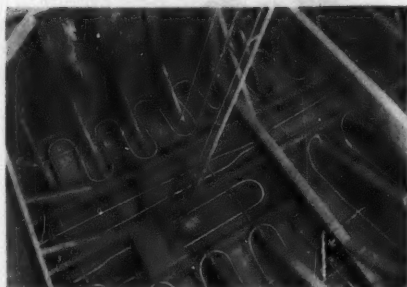
Each tanker will be of 2,700 dwt and will have a length of 100m, breadth of 15.6m, depth of 8m and draught of 5.2m. A 3,450-bhp Mitsui-B & W diesel main engine of 650VTBF-110 type will give a speed of 14 knots.

The Ministry also formally approved contracts for seven cargo liners and one tramp to be built under the 17th government shipbuilding programme. The keels of all are to be laid within the current fiscal year. In addition it granted permission to the Innoshima yard of the Hitachi Shipbuilding & Engineering Co Ltd to build a 20,390-dwt bulk carrier for Sea Enterprises Corp., of Panama. The fourth bulk carrier ordered by the same owner from Hitachi, the vessel will have an 8,750-bhp Mitsui-B & W 774-VTBF-160 diesel main engine giving a speed of 15 knots. The third vessel of the series, the 20,000-dwt *Delphic Miracle*, was delivered in September by the Innoshima yard.

In Brief

PRESIDENT KENNEDY has signed into law a U.S. bill allowing licensing of freight forwarders and permitting payment of brokerage to them by ocean ship operators. While saying he hoped the measure "will increase the efficiency of the maritime industry," he warned that, if it proves inadequate either to deal with abuses or to provide necessary assistance to shippers and carriers, he would recommend further remedial legislation.

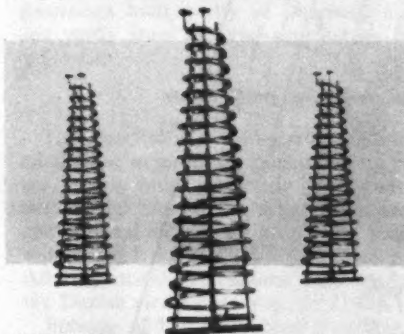
IT IS REPORTED from Leningrad that a number of 45,000-tons tankers are to be built there over the next four years, and that the keels of the first two of this series have already been laid at the Baltiysky (Baltic) and Admiralty (Admiralty) shipyards. The boilers and turbines of these ships will be controlled by a single person from a central control panel in the engine room, and the speed will be regulated directly from the bridge.

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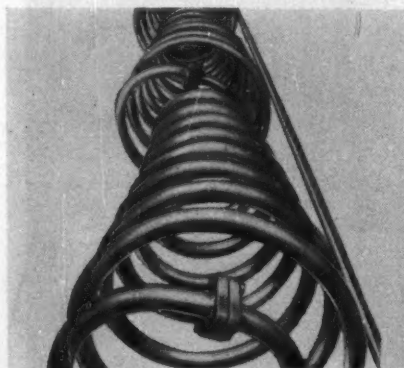
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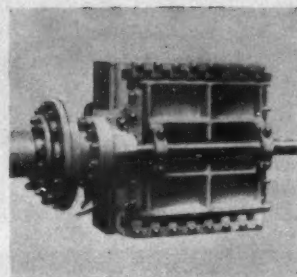
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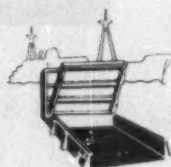
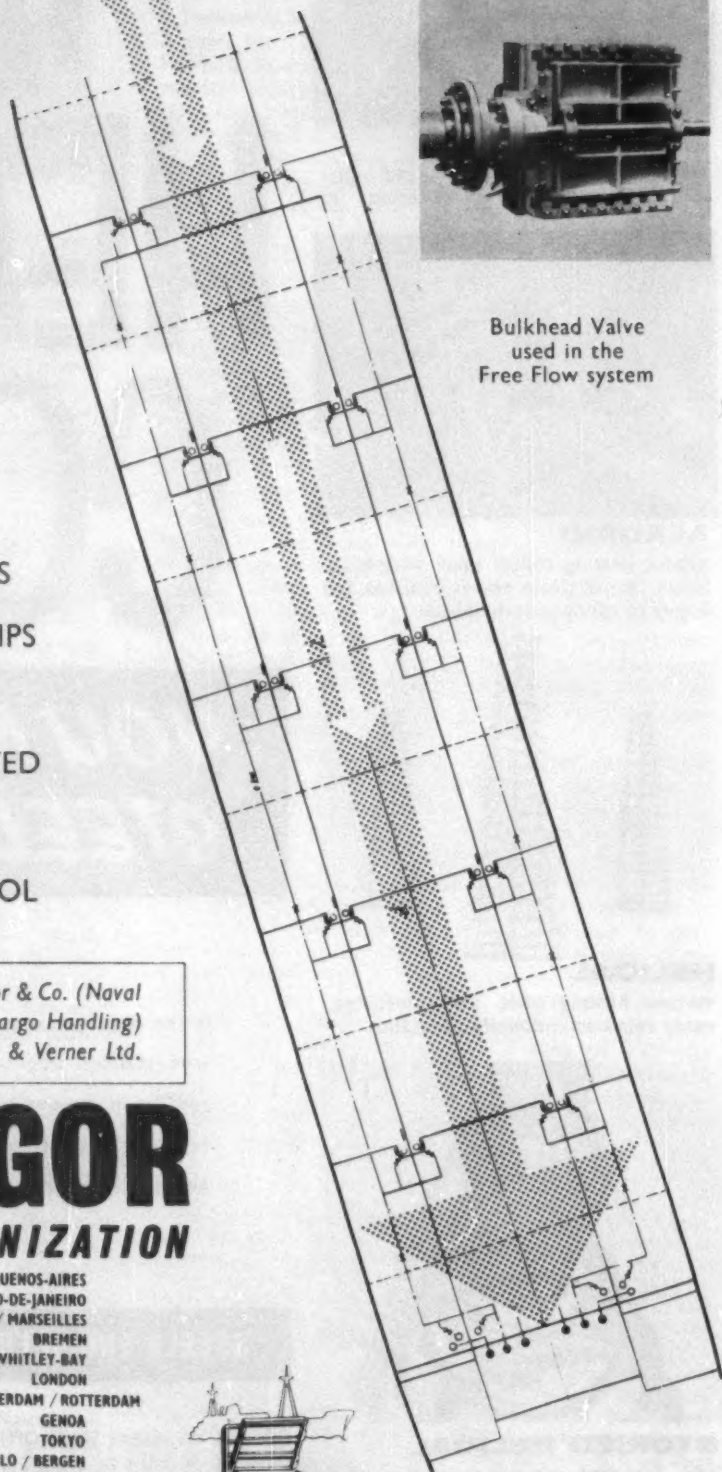
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Bulkhead Valve
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Passenger Liner "Funchal"

DANISH-BUILT SHIP WITH BRITISH STEAM TURBINES

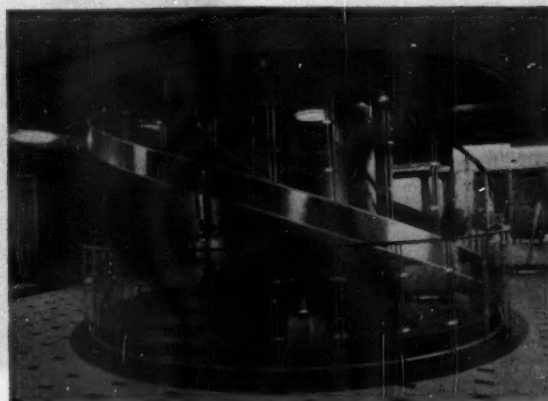
A PASSENGER liner, the largest to be built in Denmark since the war, has been built by Elsinore Shipbuilding & Engineering Co Ltd for the Portuguese shipowners Empresa Insulana de Navegacao, Lisbon. This ship, the *Funchal*, 10,031 grt, is powered by steam turbines supplied by Parsons Marine Turbine Co Ltd, and is probably the only turbine-driven ship of her kind to be built in a Danish shipyard. Tenders for the construction of this vessel were invited in March 1958 from no less than 49 shipyards in countries including Great Britain, France, Germany, Holland and Italy. Sixteen tenders were received including six from Great Britain, but the Elsinore shipyard secured the order. The keel of the *Funchal* was laid in July 1960. She was launched on 10 February 1961 and delivered on 11 October 1961.

The *Funchal* will relieve the passenger liner *Lima*, 4,056 grt, built in 1907 by Furness, Withy & Co Ltd, which has so far been serving the Lisbon-Azores-Madeira route. The cost of the new ship is under £2 million. The accommodation is in every way as good as that of a large liner, although the voyage between Lisbon and Madeira can be made in less than 24 hours; but since the ship will also be used for cruising this is understandable. A special feature is the heat-absorbing ceiling in the first-class smokers room: a method of air conditioning developed by Danish refrigerating engineers. In addition to the British steam turbines the new ship has Decca radar, Denny-Brown stabilisers, Hastie steering gear, and turbo-generators built partly in Denmark to British drawings and partly from material supplied by W. H. Allen, Sons & Co Ltd.

Model Tests and Launching

The *Funchal* is a twin-screw ship built on lines developed from experience gained from a number of passenger vessels built previously at Elsinore, in conjunction with model tests at the Wageningen tank. In addition to conventional still water propulsion tests, seakeeping tests were carried out with ahead, oblique and following seas. All hydrostatic calculations were made with the aid of the Danish electronic computer DASK.

Because of her fairly high launching weight, fine lines



Spiral staircase in the first-class hall on the promenade deck. There is a lift in the centre

PRINCIPAL PARTICULARS

Length o.a. ...	500ft 9½in
Length b.p. ...	454ft 5in
Breadth moulded ...	62ft 6in
Depth to A deck ...	38ft 0¾in
Depth to B deck ...	30ft 0¾in
Depth to C deck ...	21ft 11¾in
Draught, summer ...	20ft 3¼in
Gross tonnage ...	10,031 tons
Machinery output ...	12,250 shp
Service speed ...	20 knots
Number of passengers	
First class ...	80
Tourist class "A" ...	156
Tourist class "B" ...	164
Deck ...	100

and the depth of water in the harbour, the launching was not easy, the maximum pressure on the bottom being 90 tons/sq m. Reinforcement of the double bottom was therefore necessary but this was not fitted as a permanent



structure. In spite of the high static calculated way end pressure the lubricant, in this case Esso base and slip coat, showed no sign of cracking. The declivity of the ways was 0.0521, and the camber 0.5 metres. These values were fairly high compared with the normal practice of the builders, but were also limited because of the depth of water in the harbour.

The construction of the hull is based on a combined transverse and longitudinal frame system. Framing in the double bottom, strength deck (promenade deck) and A deck is longitudinal, with transverse framing on the sides and remaining decks. The structure is built up on a system of web frames spaced about 8 frames apart. Deckhouses and decks above boat deck level are of all-welded aluminium construction. With the exception of the side framing, the vessel is of all-welded construction.

Cargo holds are arranged fore and aft, No 2 hold being refrigerated. These holds are served by eight 3-tons derricks and space is available for the carriage of about 50 motor cars.

The engine and boiler rooms are situated amidships and divide the first and tourist classes. The tourist class accommodation can be divided into tourist A and B with separate saloons, dining saloons, lounges, smokerooms and bars. There are also children's dining saloons. The tourist A class smokeroom and lounge is convertible and can be used either as a chapel or as a cinema.

All first-class cabins have a separate bathroom and toilet, and all tourist A class cabins have a bath and toilet adjacent to the cabin, either separate or one toilet room for two cabins. Cabins for the officers are situated on the boat deck, where there are also the gymnasium and children's playroom. Behind the funnel is a dog kennel.

In the after end of B deck there are a hospital comprising male and female wards, a crew ward, dispensary/consulting and waiting room and attendant's cabin. The



View of the first-class dining saloon

galley is arranged on A deck between the first and tourist class dining saloons. A transverse electrical overhead crane takes provisions on board into the galley and from there these are taken by lifts down to the provision stores on D deck and tank top. The accommodation throughout is to a very high standard and the joinery and general finish is excellent.

The *Funchal* is divided into five fireproof zones, separated with A-class bulkheads. The A-class bulkheads consist of steel insulated with 50mm Rockwool fixed to the bulkheads or decks by means of clips and covered with wire mesh. In the case of aluminium bulkheads, Rockwool and wire mesh are placed on both sides. Stairways are formed as trunks with fireproof doors insulated with asbestos and Rockwool.

Heat Absorbing Ceiling

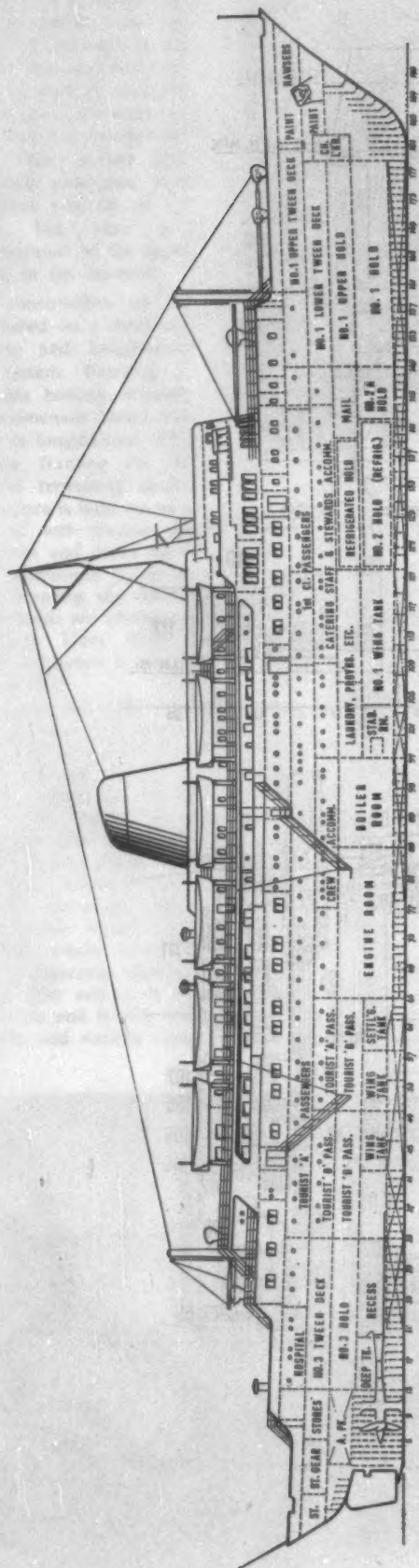
The vessel has been equipped with automatic air conditioning for the public rooms and spaces and individual air conditioning for the passenger and crew accommodation. The total amount of air used in these systems is 310,000 cu m/hour and the total heat consumption 660,000 k.cal/hour. The total heating capacity is 830,000 k.cal/hour and the total power consumed 640 hp. The

heat-absorbing ceiling in the first class smoke room on the promenade deck is the first of its kind to be installed on board ship. Developed by GW Ventilation A/S, it is a highly satisfactory method of air-conditioning a large room.

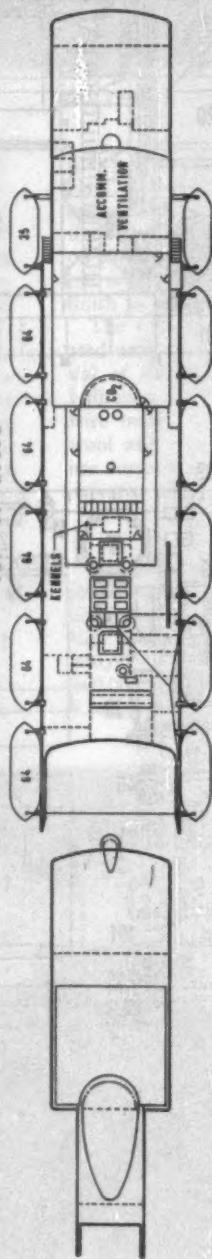
An automatic sprinkler and fire alarm system has been installed, and this too has been supplied by GW Ventilation A/S. The system is divided into 15 sections each served by its own control valve. An indicator with audible and visual signals is located on the bridge. The



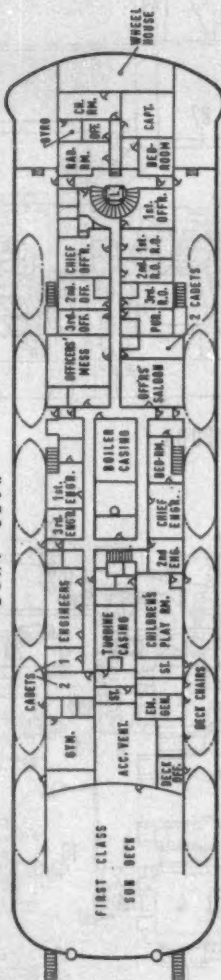
The first-class lounge



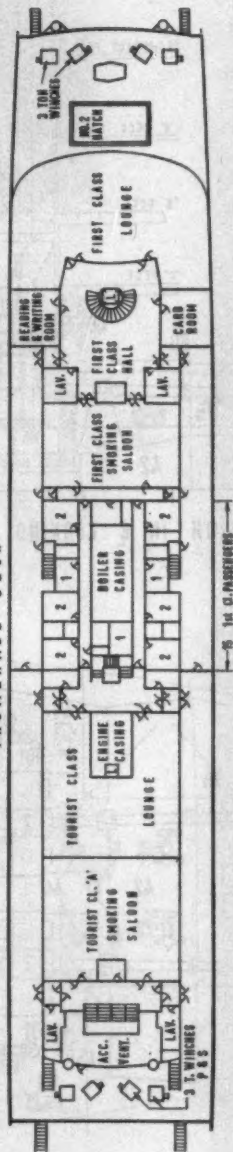
TOP OF HOUSE



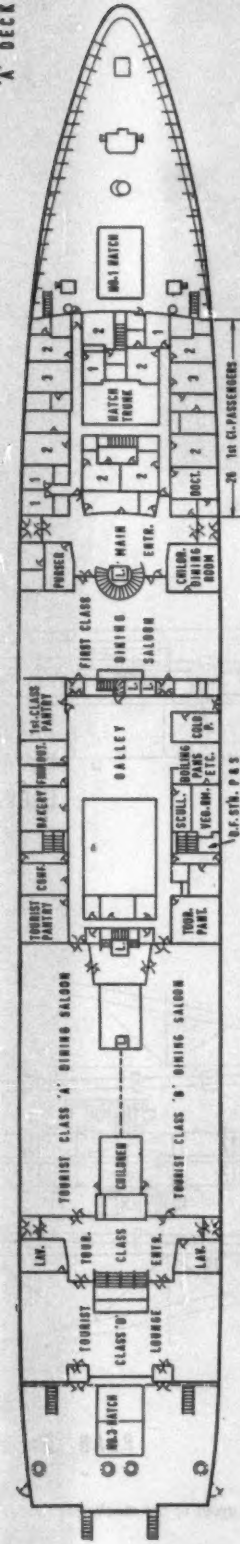
BOAT DECK



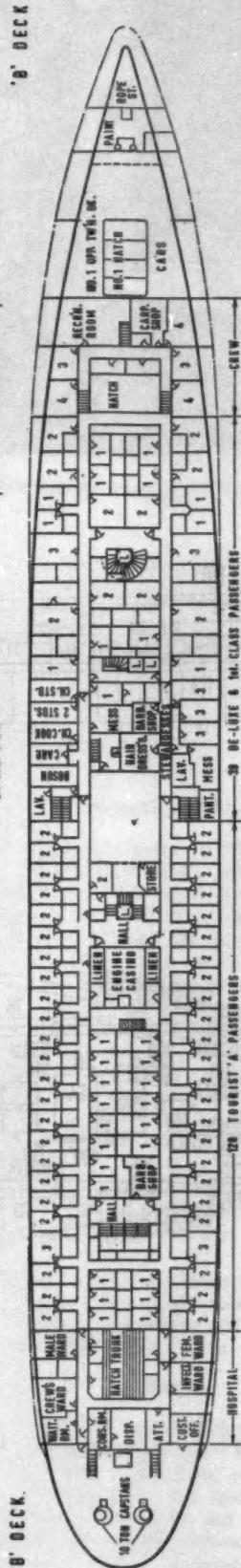
PROMENADE DECK



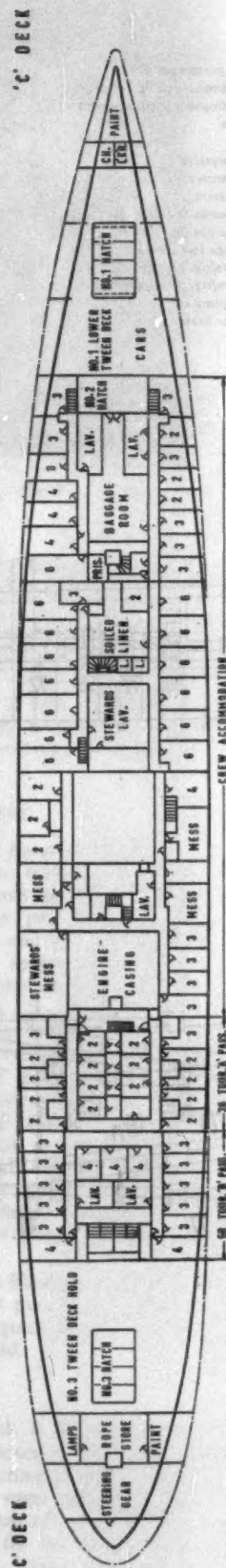
A DECK



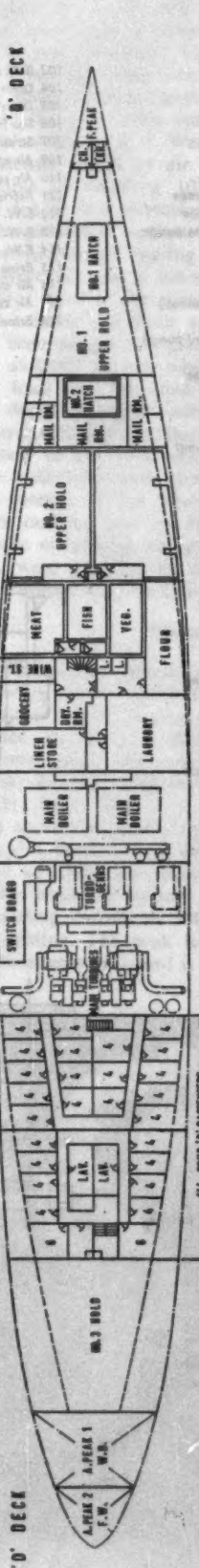
B DECK



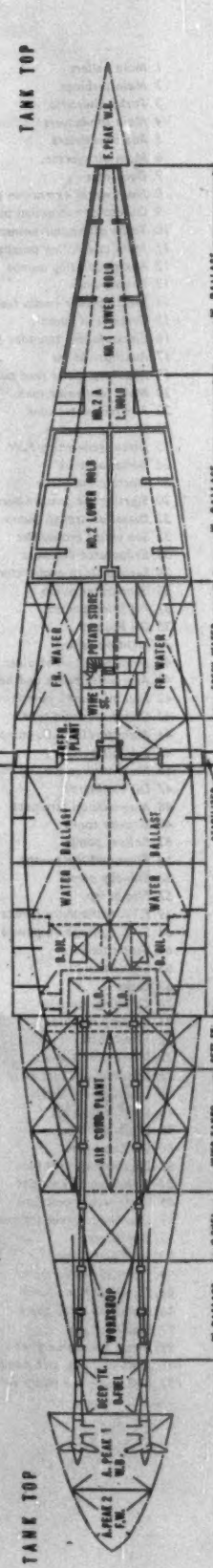
C DECK



D DECK



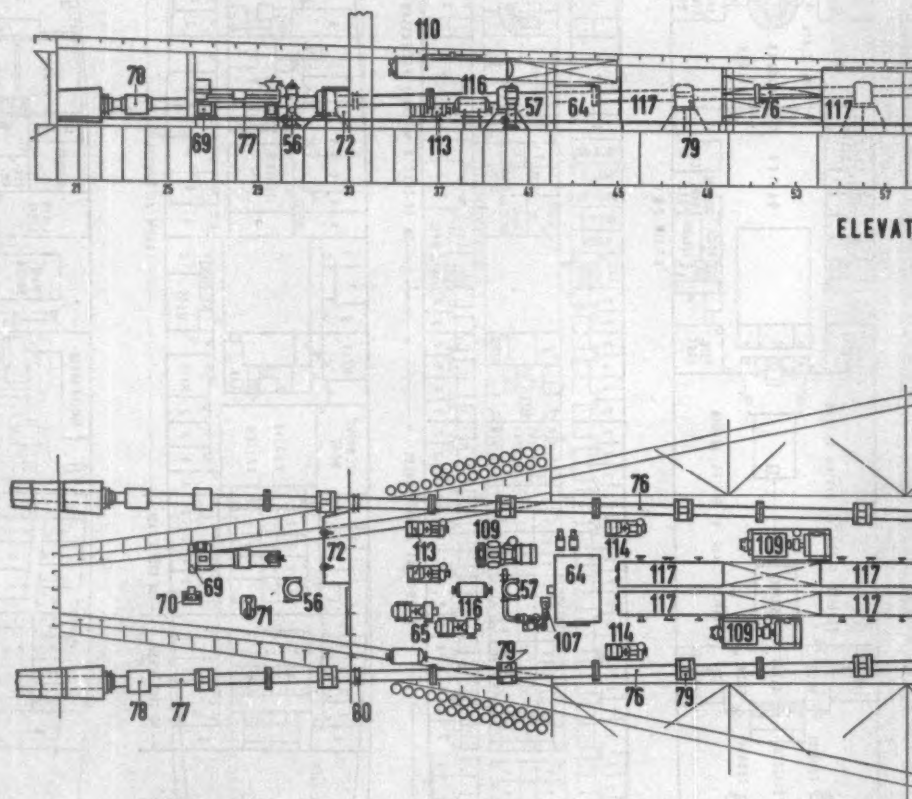
TANK TOP



General arrangement of the passenger liner "Sunchal," 10,031 grt, built by the Elsinore Shipbuilding & Engineering Co Ltd, Denmark, for Empresa Insulana de Navegacao, Lisbon

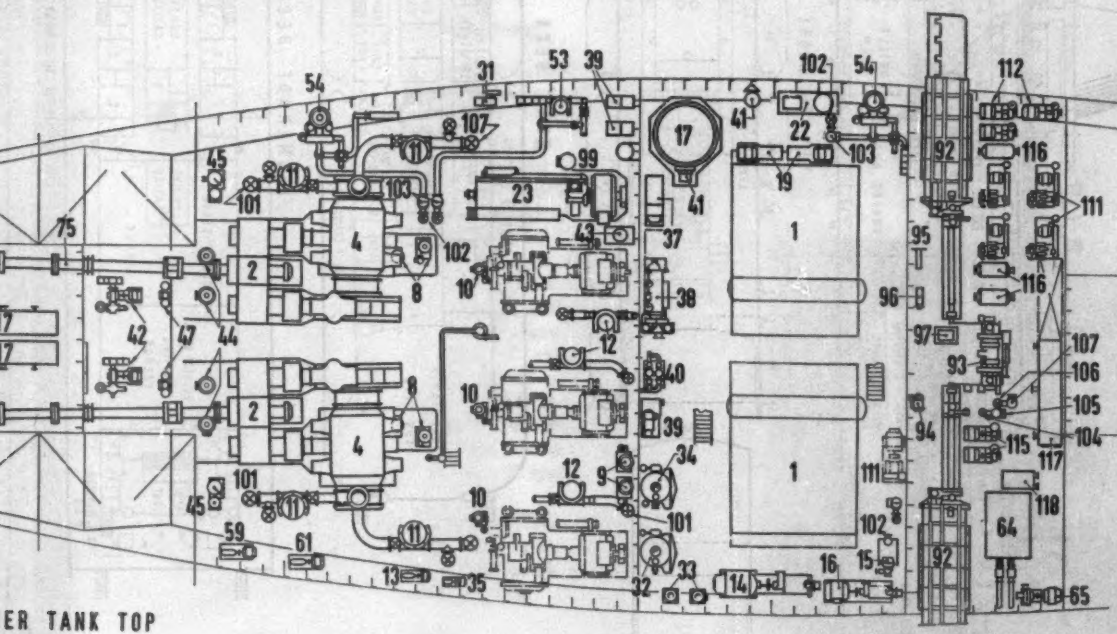
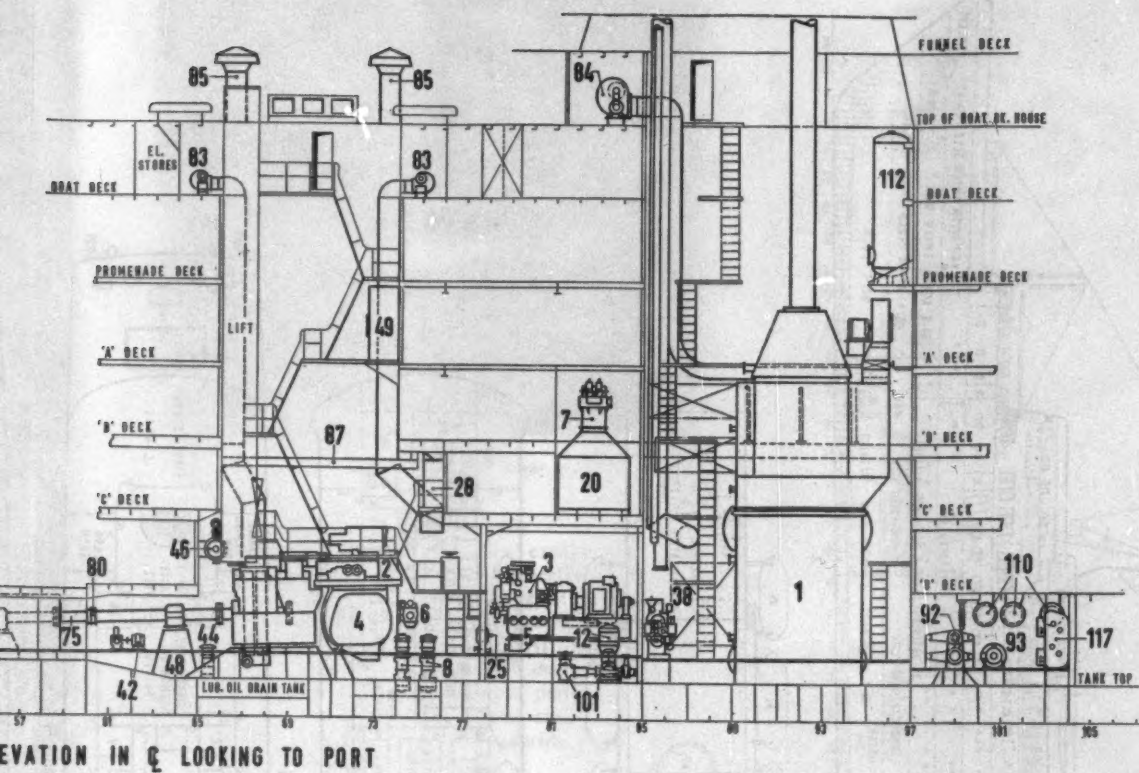
- 1 Main boilers
- 2 Main turbines
- 3 Turbo alternator
- 4 Main condensers
- 5 Aux condensers
- 6 Main air ejectors
- 7 Deaerator
- 8 Main water extraction pumps
- 9 Deaerator extraction pumps
- 10 Turbo alternator extraction pumps
- 11 Main circulating pumps
- 12 Aux circulating pumps
- 13 Boost pumps
- 14 Electrofeeder (main feed pump)
- 15 Turbo feed pump
- 16 Electrofeeder (standby feed pump)
- 17 Auxiliary boiler
- 19 Auxiliary boiler feed pumps
- 20 Main feedwater tank
- 22 Aux feedwater tank
- 23 Diesel generator
- 25 Diesel generating F.W. pump
- 28 Diesel oil tank
- 29 Starting air bottle
- 30 Starting air compressors
- 31 Diesel oil transf. pump
- 32 Sea water evaporator
- 33 Evaporator distillers
- 34 Second stage evaporator
- 35 Evaporator pump
- 37 Oil-firing pumps
- 38 Oil heaters
- 39 Lighting-up set
- 40 Main boiler oil strainer
- 41 Aux boiler pump and heater
- 42 Fuel oil transf. pumps
- 43 Diesel oil drain tank
- 44 Main turbine L.O. pumps
- 45 Lub. oil purifiers
- 46 Main turbine lub. oil coolers
- 47 Oil strainers
- 48 Magnetic oil strainers
- 49 Gravity tanks
- 53 Ballast pump
- 54 Bilge and fire pumps
- 56 Standby pump
- 57 Fire pump
- 59 F.W. hydrophore pumps
- 61 S.W. hydrophore pumps
- 64 Septic tanks
- 65 Septic pumps
- 69 Lathe
- 70 Grinding machine
- 71 Drilling machine
- 72 Vice bench
- 75 Intermediate shafts
- 76 Intermediate shafts
- 77 Intermediate shafts
- 78 S.K.F. couplings
- 79 Shaft bearings
- 80 Stuffing boxes
- 83 Engineer room vent fans
- 84 Boiler room vent fans
- 85 Engineer room vent fans
- 87 Overhead runner for main turbine
- 92 Stabilisers
- 93 Stabiliser pump
- 94 Stabiliser servo motor
- 95 Stabiliser hand pump
- 96 Stabiliser valve chest
- 97 Stabiliser gyro
- 99 Diesel generator filter
- 101 Main and aux circ pump valves
- 102 Ball. bilge fire pump valves

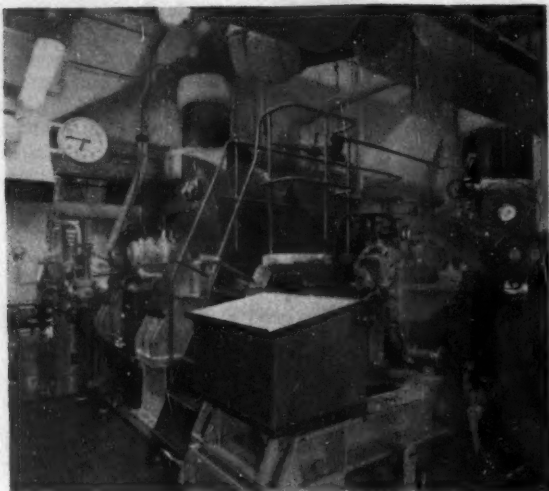
- 103 Ball. bilge fire pump strainers
- 104 Diesel gen. hydrophore pump valves
- 105 Diesel gen. hydrophore pump strainers
- 106 Sea inlet valves
- 107 Strainers
- 109 Air cond. compressors
- 110 Air cond. condensers
- 111 Refrig. compressors
- 112 S.W. cooling pumps (refrig.)
- 113 S.W. cooling pumps (air cond.)
- 114 F.W. circ. pumps (air cond.)
- 115 Brine pumps (refrig. plant)
- 116 Air cond. and refrig. plant receivers
- 117 Air cond. refrigerators
- 118 Brine and mixer heater



PLAN OVER

Layout of the machinery spaces in





One of the main propulsion steam turbines in the engine room of the "Funchal"

holds are equipped with CO₂ fire extinguishing with detectors in a control panel in the wheelhouse.

Navigational aids include Sperry gyro compass and automatic helmsman, Decca radar, Kelvin Hughes echo sounder, Chadburn telegraph and SAL log. In the wheelhouse there are the propeller shaft tachometers, watertight door control panels, control panel for the fire-fighting system and the Denny-Brown stabiliser controls. The four-cylinder electro-hydraulic steering gear has been supplied by John Hastie & Co Ltd.

Propelling Machinery

The propelling machinery in the *Funchal* consists of two sets of PAMETRADA-type steam turbines built by Parsons Marine Turbine Co Ltd, each developing 6,125 shp per shaft (maximum 6,900 shp per shaft). The astern power is 3,700 shp per shaft and the shaft speed 150 rpm. The ship has a service speed of 20 knots. During her sea trials a maximum speed of 23 knots was attained and the average speed was 22½ knots.

The steam conditions are 600 lb/sq in and 850 deg F. Each of the HP turbines has one two-row wheel followed by 13 impulse stages, while the LP turbines have five impulse stages followed by six reaction stages. The astern turbine is built into the LP cylinder and can develop 60 per cent of the full ahead power. The HP turbines run at 6,011 rpm and the LP turbines at 3,960. Power is transmitted to the shafts through double-reduction gearing. The two Zeise four-bladed propellers are of 4,100mm diameter and are cast in special "Alcunio" bronze.

The condensers have been made at Elsinore to Parsons' drawings and are bolted to the under part of the LP turbines. The manoeuvring valves and quick closing system have been supplied by Cockburns Ltd.

Boilers

Steam is generated in two Babcock & Wilcox Selectable Superheat boilers built under licence at the Elsinore shipyard. They have a maximum continuous evaporation of 58 tons of steam/hour. The feed water system in this ship is of interest owing to the fact that extraction pumps are used which can operate without the need for a constant water level in the condensers. These pumps will operate at a low suction head without cavitation and

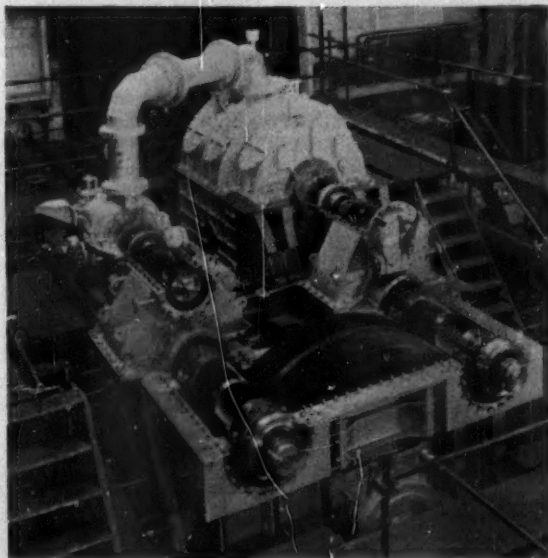
simplify the installation by dispensing with the need for float valves and accompanying piping.

The main deaerator closed feed system consists of four Weir vertical water extraction pumps, two working and two standby, each capable of discharging 47,000 lb/hour at 45 lb/sq in when running at 1,500 rpm. Other items supplied by G. & J. Weir Ltd include two vertical inter-condenser steam jet air ejectors, one type "S" deaerator capable of handling 107,603 lb/hour of feed water at 110 deg F, two vertical deaerator extraction pumps, three turbo-generator vertical water extraction pumps, one water-lubricated bearing turbo-feed pump, a nine-stage electrofeeder and a ten-stage electrofeeder. The Weir deaerator is of a new design of the tray and cascade type and suitable for both pressure and vacuum systems. It has been designed to give a guaranteed oxygen content as low as 0.005 cc/litre when operating between 50 per cent full load and full load when the outlet temperature is 240 deg F or higher, with a temperature rise through the deaerator of not less than 50 deg F, and when the oxygen content of the feed water does not exceed 0.22 cc/litre. The water-lubricated bearing turbo feed pump is also of new design. It has been undergoing tests in Shell and Esso tankers and in H.M.S. *Keppel*. The four main turbine circulating pumps, each of 1,100 tons/hour capacity, were supplied by A/S Iron, and the two 25-tons/hour evaporators by Caird & Rayner Ltd.

Electricity Supply

Electricity for power and lighting is supplied by three 900-kVA turbo generators, and one diesel 425-kVA generator. There is also a 120-kVA emergency generator located on the boat deck. The steam turbo equipment, turbines, gears and condensers, was built under licence by the Elsinore shipyard to the design and drawings of W. H. Allen, Sons & Co Ltd, the principal components such as turbine rotors and gearing being supplied by the licensors. Each turbine drives an A/S Titan 720-kW alternator at 1,500 rpm through Allen parallel shaft gears.

The electrical system employs three-phase 50-cycles alternating current at 380 volts for power and 220 volts for lighting. The peak load at sea with the full number of passengers on board is estimated at 1,600 to 1,700 kVA.



One of the two main Parsons turbines on the test bed. Each set develops 6,125 shp

Oil Topics

RUSSIAN TANKER OPERATIONS

RUSSIAN oil exports to the free world, which almost trebled in three years to about 20 mn tons in 1960, have been carried largely in foreign-flag vessels. This trade, which has been analysed recently in a Westinform Report (No 191) has also been discussed by the Petroleum Press Service. It comments that the Russians do not go in for long-term tanker chartering. A common practice of theirs has been to conclude contracts with tanker owners for the transport of certain tonnages of oil over a given period. For example, they have an agreement with the Niarchos group providing for the transport of 2 mn tons of oil—1.2 mn tons to European destinations in 1960-61 and 0.8 mn tons to Japan in 1962-63. They have two similar contracts with Norwegian owners, covering the movement of about 700,000 tons over a three-year period from June 1960. More important is their agreement with the U.K. company, London & Overseas Freighters. Concluded in September 1960, this was stated by the company to provide three to four years' employment for nine of the firm's tankers. Extended last June, it now provides employment for a dozen of the company's 16 tankers. Apart from agreements of this kind, the Russians have hired a number of vessels on consecutive voyage charters.

Building Own Tonnage

RECENTLY, however, the Russians have decided that they urgently need more carrying capacity of their own. Besides buying some existing tankers, new and secondhand, they have started building large carriers in their own yards and have placed orders for substantial tonnages abroad. At the same time, they are improving and deepening the Black Sea ports from which most of the exports are consigned, to enable these to accommodate large tankers. The tonnage on order and due for delivery within the next two years is certainly in excess of 800,000 dwt. According to an official announcement, there are plans for the building in Leningrad of a fleet of 60,000-ton tankers of advanced design; how many are contemplated is not known, but the keels of two have already been laid. Leningrad yards are known to be working on three other tankers, of 12,000, 30,000 and 47,000 dwt respectively. A Polish yard is completing a 19,000-ton ship.

Outside the Communist bloc, the Fincantieri group of State-owned shipyards at Genoa has just secured from the Russians orders for six motor tankers of 48,000 dwt each. Soviet buyers have also purchased a 31,500-ton turbine tanker built in Italy for another owner. Similarly, they purchased some months ago a 39,000-tonner built in Japan for a Greek owner who refused delivery; and they now have contracts with Japanese yards for six 35,000-tonners, due for delivery within the next fifteen months. While some of the Soviet Union's old tankers may be scrapped, the years 1962 and 1963 will witness a substantial increase in the Russian tanker fleet.

Tanker Sales Slack

WITHOUT the usual seasonal improvement in freight rates there is, according to the monthly sale and purchase report of R. S. Platou A/S of Oslo, "a certain tension being developed in the sale and purchase market for secondhand tankers." At this time of the year when one should be able to talk in terms of profitable rates, as many as 105 tankers of a total of 2,139,000 dwt are engaged in the grain trades, and a further 15 vessels of 350,000 dwt are fixed for fairly prompt delivery into the same trades. The corresponding figures quoted by the Norwegian report for the midsummer period of this year were 1,750,000 dwt trading and 300,000 dwt fixed but not

trading. Early in October there was a fairly good demand for tankers, but since then activity had tended to show a casual and rather more uncertain approach. Several tanker sales are reported by R. S. Platou, including the *Shetland* (16,053 dwt) to Italians for £250,000 cash with charter-free delivery, and the 18,860-dwt *Acina* which changed hands within Norway together with a Caltex charter at 30s per dwt per month until August 1963. Unfortunately no price details have been reported.

RECENT SHIP SALES

Two Swedish newbuilding motorships, the *Albertina* and *Fredrika* (2,290 dwt, 1,900 grt, building at Solvesborg and Falkenberg respectively) sold by Erik Kekonius, Lion S.S. Co, Gothenburg, to Stoomvaart Mij. N.V. Van Nievelt Goudriaan, Rotterdam, for about £305,000 each with delivery November.

Twin-screw motor tanker *Esso Orinoco* (ex-*Esso Languedoc*, ex-*Orville Harden*, 11,191 grt, 6,904 nrt, built Monfalcone 1933 by C.R.D.A.) sold by Cie. de Petroleo Lago, Caripito, to Eckhardt & Co GmbH, for demolition at Hamburg.

Liberty-type cargo steamer *Evros* (ex-*Joshua A. Leach*, 10,865 dwt, 7,244 grt, 4,396 nrt, built 1943 by Houston Shipbuilding Corp.) sold by Theofano Maritime Co Ltd, Piraeus, to Yugoslav buyers reported as the *Prekomorska Plovidba* and renamed *Bar*.

Motor tanker *Margareta* (18,850 dwt, 12,506 grt, 7,120 nrt, built 1958 by Uddevallavarvet A/B) sold by A/B Navigare (Axel Brostrom & Son), Stockholm, to Einar Lange & Co, Oslo, including a time charter to a major oil company at 33s 9d per dwt until 1965.

Motor tanker *Acina* (18,860 dwt, 12,369 grt, 7,052 nrt, built 1958 by Uddevallavarvet) sold by A/S Aino & A/S Viva (C. H. Sorensen & Son), Arendal, to Kornelius Olsen, Stavanger, and renamed *Liffjord*. Sale includes a time charter to Caltex at 30s until August 1963. Delivery is late 1961.

Motor tanker *Shetland* (16,052 dwt, 10,649 grt, 6,236 nrt, built 1951 by A/S Lindholmens Varv) sold by A/S Det Dansk-Fransk (D/E (E. Hahn-Petersen), Copenhagen, to Italian buyers for £250,000 cash.

Motor vessel *Crestville* (6,285 dwt, 5,444 grt, 3,016 nrt, built 1958 by Helsingors Skibsvaerft & Msk.) sold by Skibs A/S Goodwill (A. F. Klaveness & Co A/S) to other Norwegian buyers.

Cargo steamer *Apollo* (ex-*Farnham*, ex-*Fulham*, ex-*Dublin*, ex-*Albistan*, ex-*Cambyes*, 3,213 grt, 2,004 nrt, built 1905 by Wm. Gray & Co Ltd) sold by Soc. Generale per L'Industria Mineraria e Chimica Montecatini, Rome, to Italian shipbreakers.

Twin-screw motor vessel *Marie Bakke* (4,307 grt, 2,565 nrt, built 1926 by the Odense Staalskibsvaerft) sold by D/S A/S Varoy, Haugesund, to Japanese shipbreakers for £20 18s per ton light displacement, with November delivery Japan.

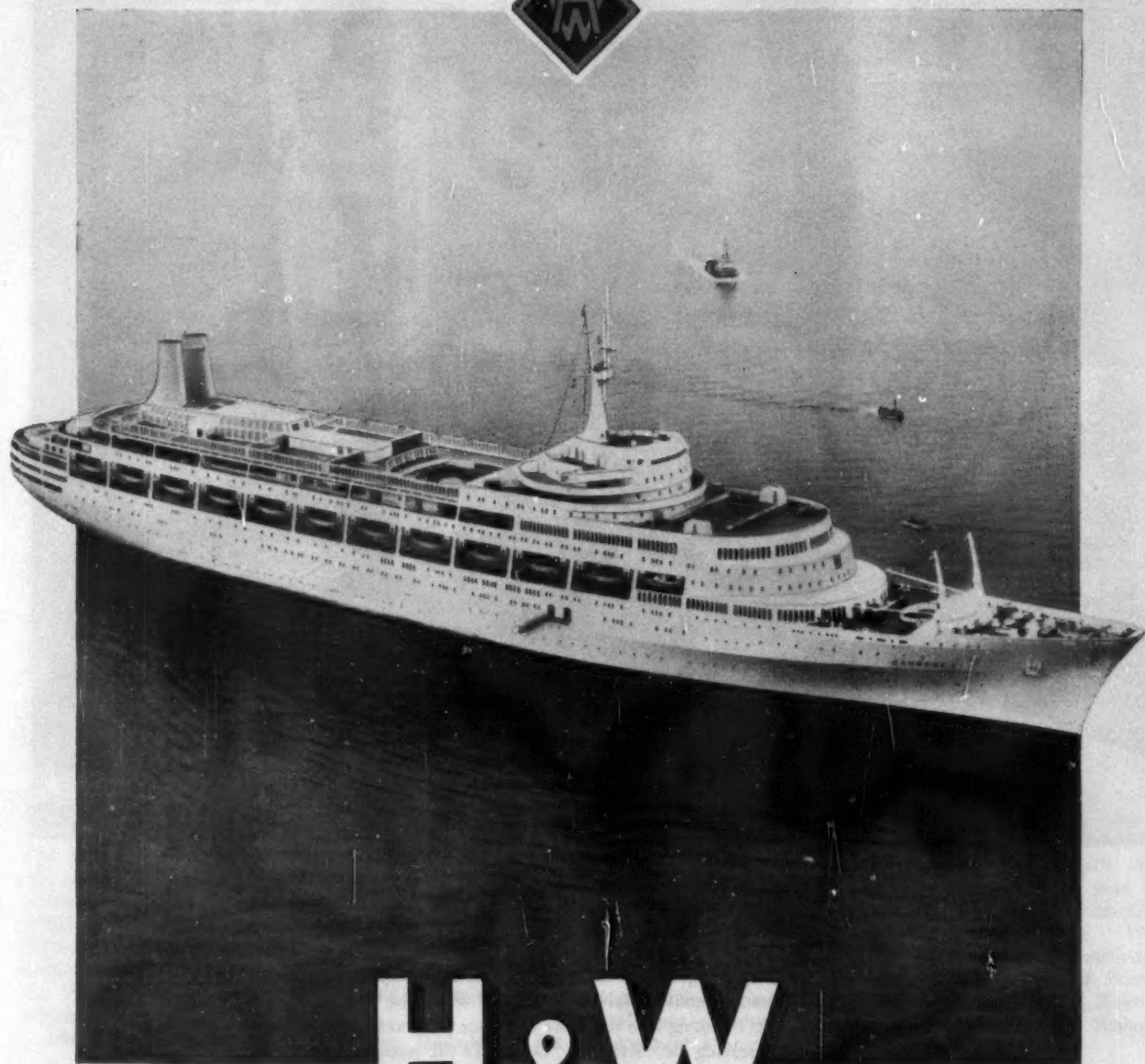
Liberty-type cargo steamer *Samythian* (7,219 grt, 4,380 nrt, built Portland, Me., 1943 by New England Shipbuilding Corp.) and *William Becknell* (7,244 grt, 4,364 nrt, built 1943 by the Houston Shipbuilding Corp.) sold by U.S. Department of Commerce to Union Minerals & Alloys Corp., New York, for \$73,289 and \$83,689 respectively for demolition.

Liberty-type cargo steamer *Wyatt Earp* (7,176 grt, 4,380 nrt, built 1943 by California Shipbuilding Corp.) sold by U.S. Dept. of Commerce to Hyman-Michaels Co, Chicago, for \$82,011 for demolition.

Liberty-type steamer *John Howard Payne* (7,181 grt, 4,384 nrt, built Richmond, Cal., 1942 by Permanente Metals (Shipyard No 1) sold by U.S. Dept. of Commerce to Bethlehem Steel Corp for \$71,254 for demolition.

Liberty-type steamer *John Weydemeyer* (7,176 grt, 4,380 nrt, built New Orleans 1944 by the Delta Shipbuilding Co Inc) sold by U.S. Department of Commerce to Southern Scrap Material Co Ltd, New Orleans, for \$68,259 for breaking up.

Liberty-type steamer *Cyrus W. Field* (7,176 grt, 4,380 nrt, built Richmond, Cal., 1943 by Permanente Metals (Shipyard No 2) sold by U.S. Department of Commerce to Material Supply Co Inc., Wilmington, for \$80,120 for breaking up.



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Shipbuilders · Shiprepairers · Engineers

BELFAST

GLASGOW

LONDON

LIVERPOOL

SOUTHAMPTON



PURSER : "I just want to figure out with you, Sparks, what ship-to-shore communication facilities we can make available to passengers with this new installation we've got this trip."

SENIOR RADIO OFFICER : "The equipment can handle all the likely traffic easily. The new Globespan gives me utterly reliable HF and MF telegraphy plus high quality long-distance R/T linking into the shore telephone networks. It takes all the ordinary traffic, leaving the "Reliance" clear as the MF emergency transmitter. The "Atalanta" receiver covers a full frequency range from 15 kc/s to 28 Mc/s."

PURSER : "I expect there will be a run on the long-distance radiotelephone. Do we want to limit passengers' calls from the kiosk on A Deck?"

S.R.O. : "I don't think so. I can clear them all right. We shall give priority to calls for the Captain and your own office, of course."

PURSER : "How about telegraph communication?"

S.R.O. : "Pretty well unlimited. We can give the full Marconigram service, plus flowers and book tokens by radio, for all the tycoons and V.I.P.'s and still keep things clear for the ship's own traffic."

MARCONI MARINE *Radio Communication Equipment*

maintain expert service facilities in all principal ports

Motor Yacht "Ivara"

TWIN-SCREW VESSEL
BUILT BY VOSPER



THE motor yacht *Ivara* has recently been completed by Vosper Ltd of Portsmouth, for the use of Mr J. H. Loudon, president of the N.V. Koninklijke Nederlandsche Petroleum Mij, and managing director of Shell Petroleum Co Ltd. The christening of the vessel was carried out on August 29 by Mrs Loudon.

The hull is all-welded steel with aluminium superstructure and has been constructed to Lloyd's Register yacht classification. The New York firm of naval architects, Philip L. Rhodes, were responsible for the design, while the detailed drawings and construction were undertaken by Vosper Ltd. Principal dimensions of the yacht are length 105ft, beam 20ft, depth moulded 11ft and draught 6ft.

The owner's accommodation consists of two single cabins and two double cabins below the main deck aft, each with separate bathroom fitted with either bath or shower and toilet. On the main deck are the lounge, pilot house, captain's cabin and dining saloon forward. Simplicity and quiet taste is the underlying theme of the interior decor, for which Mr J. C. Whitaker of Kelso Ltd, South Audley Street, London W1, was responsible. All panelling throughout the yacht is in natural wood veneers and the decks are in teak. There is an engineer's cabin and forward accommodation for four crew. Also forward of the engine room are the galley, fitted with a bottled-gas stove and refrigerator, and the crew's mess. On the deck above the lounge are two launches, one of which is a Dowty jet craft.

The main machinery consists of two Rolls-Royce C8

diesel engines, each developing a maximum power of 330 shp at 1,800 rpm. These give a cruising speed of about 12½ knots with a maximum of 13 knots. The engines drive twin screws through Self Change oil-operated reverse-reduction gearboxes with a ratio of 2:1. Two Mawdsley 27-kW 110-volt DC generators, powered by Mercedes-Benz 6-cylinder diesel engines, are installed to supply lighting and power requirements, and to charge up the lighting batteries. Vosper Ltd was also responsible for the manufacture of the switchboard and the complete electrical installation.

The vessel has a range of 2,000 miles at a cruising speed of 11 knots. Fuel capacity of the yacht is about 15 tons, while fresh water tanks hold 1,500 U.S. gallons. Vosper roll damping equipment is installed.

Full Air Conditioning

The yacht is air conditioned in the guest and crew accommodation by a high velocity Weathermaster system supplied by Carrier Engineering Co Ltd of London. Heating and hot water supply are by a Way Wolfe oil-fired boiler. Mathway electro-hydraulic steering gear is fitted, operating a single rudder with duplicate steering positions in the wheelhouse and upper cockpit. The engines can also be controlled from both these positions. The Arkas system of automatic pilot is also fitted. Navigational equipment includes a Decca 303 radar set, Kelvin Hughes echo sounder, Neptunus R.T. equipment, Walker log and Marconi VHF.



The dining room forward



The main deck lounge

Distant Water Stern Trawler

PROTOTYPE VESSEL TO BE BUILT BY NANTES SHIPYARD

A PROTOTYPE distant water stern trawler is to be built by Ateliers & Chantiers de Bretagne, Nantes, for Armements Victor Pléven, St. Malo. The keel of this vessel, which will be named *Colonel Pléven II*, is to be laid in December and delivery is expected to be made next summer. This interesting trawler will be constructed on the lines of an aircraft carrier, with the bridge structure on the port side so as to allow considerable amount of open deck space and a long slightly angled ramp for hauling in the nets.

The *Colonel Pléven II* will have space on the fore deck for a helicopter to land, for instance, in the event of it being found necessary to remove an injured man. Equipment for deep freezing or salting down fish will be installed on the lower deck. Propulsion will be by diesel engine and electric motor. A variable-pitch propeller will be fitted.

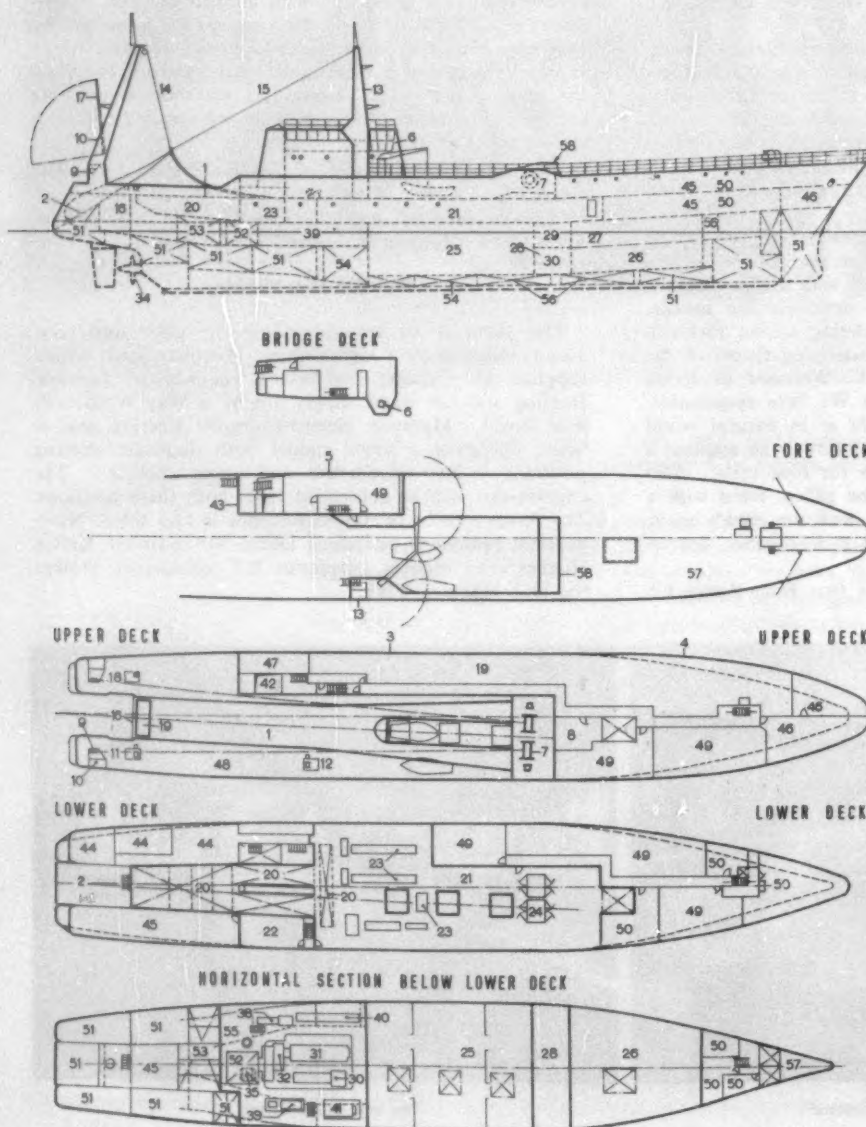
The principal particulars of the *Colonel Pléven II* will be as follows:—

Length o.a.	255ft 10in
Length b.p.	223ft
Breadth	39ft 4½in
Depth to upper deck	26ft 10¾in
Speed loaded	14.5 knots
Fish hold capacity	42,372 cu ft
Bunker capacity (approx.)	18,000 cu ft
Crew	59

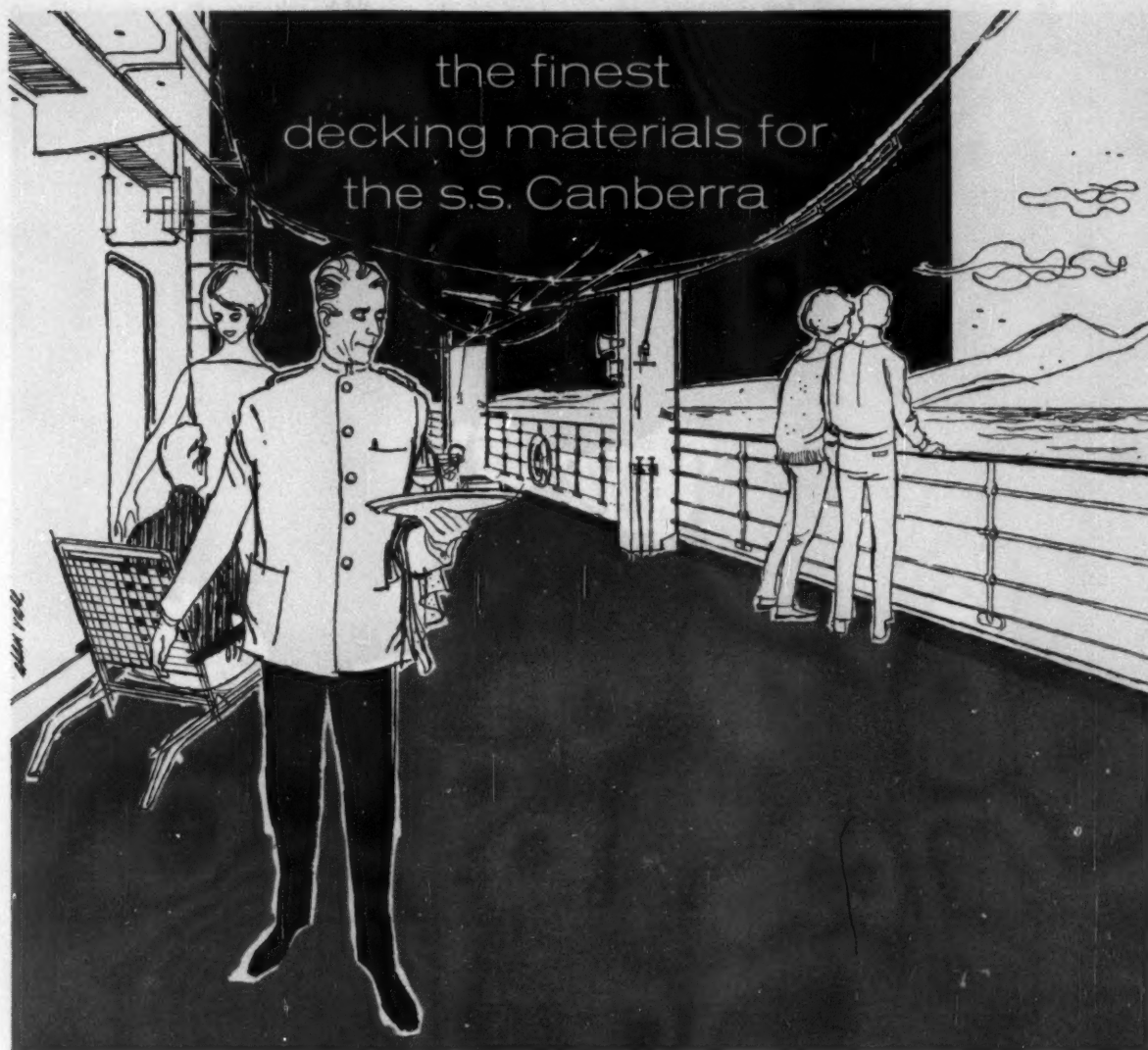
The trawl will be handled from the ramp deck (1) at upper deck level over the stern ramp (2). This ramp deck, which is about 131ft in length, will enable the trawl to be hauled in two pulls. (With a conventional trawler as many as four pulls may be necessary.) As will be noted from the accompanying illustration, the ramp is angled to starboard so as to allow a deckhouse to be erected on the

port side (3). This is an extension of the fore-castle (4). On top of this structure there is an elongated house (5) shaped like a conning tower, and this is topped by a control house. The latter has a glazed wing (6) from which the vessel can be scanned from bow to stern, and where the skipper will be seated in a swivel chair with all the instruments and controls around him, so that he will

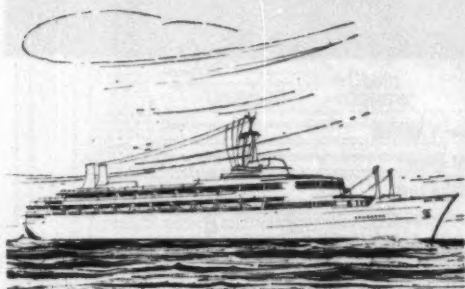
Layout of the trawler. The bridge is on the port side, with a control position projecting over the working deck



- | | |
|--------------------------------|-------------------------------|
| 1 Ramp deck | 30 Refrigerating compressors |
| 2 Stern ramp | 31 "Father" engine |
| 3 Side deckhouse | 32 Hydraulic coupling |
| 4 Fore-castle | 33 Reduction gearing |
| 5 Deckhouse | 34 Propeller |
| 6 Bridge wing | 35 AC generator |
| 7 Trawl winch | 36 Diesel generator |
| 8 Trawl winch motor | 37 Emergency generator |
| 9 Warp sheaves | 38 Motor/generator |
| 10 After gantry | 39 Engine platform |
| 11 Net lifting winch | 40 Main switchboard |
| 12 Net hauling-in winch | 41 Boiler |
| 13 Forward gantry | 42 Engine casing |
| 14 Net lifting rope | 43 Engine room skylight |
| 15 Net hauling-in lifting rope | 44 Engine store and workshop |
| 16 Net strap | 45 Net and fishing gear store |
| 17 Hinged derrick | 46 Deck locker |
| 18 Derrick handling winch | 47 Forge |
| 19 Fish chute | 48 Fishing gear |
| 20 Fish ponds | 49 Accommodation |
| 21 Fish processing plant | 50 Provision space |
| 22 Cod liver oil plant | 51 Fuel tanks |
| 23 Fish processing plant | 52 Engine oil tanks |
| 24 Deep freeze cabinets | 53 Cod liver oil tanks |
| 25 Salted fish hold | 54 Feed water |
| 26 Frozen fish hold | 55 Distilling plant |
| 27 Portable platform | 56 Portable water |
| 28 Refrigerating plant room | 57 Fore deck |
| 29 Refrigerating evaporators | 58 Breakwater |



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be able to control the operation of his ship and the hand-control house is covered by a patent.

A 420-hp motor-driven trawl winch (7) with brakes controlled by the skipper will be installed at the forward end of the ramp deck. The warps are led over sheaves (9) on the gantry (10); a special arrangement being used to release the warps and roll them on to the same drum as the bridles. The cod end is hauled in by the two winches (11 and 12) on the starboard side of the trawler, operating in a similar manner to the burtoning method of cargo handling. The gantries (10 and 13) carry idler sheaves for ropes (14 and 15) secured to (16) and rolled on the winch drums (11 and 12). The cod end hauling in arrangement is covered by ACB patent No PV 860 578. A hinged derrick (17) reaches out over the stern and is used in conjunction with winch (18) to ease the trawl over the stern.

The catch is unloaded directly from the cod end through the fish chute (19) into ponds (20) which are on the lower deck together with the 350 cu metre processing plant (21). After sorting and gutting the livers are passed on to the liver oil extraction plant (22) while the fish is taken along to the various lines of processing machinery (23). Fish for quick freezing is then weighed, packed and run through the quick-freezing cabinet (24). The whole plant is suit-

ably insulated and illuminated by means of skylights, sidelights and fluorescent lighting.

Fish holds are arranged below the lower deck, the 800 cu metre after hold (25) being used mainly for salted fish. The 400 cu metre insulated forward hold is used for keeping frozen fish at -30 deg C, and is subdivided by a portable platform (27). However, either hold can be used for salted or frozen fish. A compartment (28) arranged between the two holds contains the refrigeration evaporators (29) and the compressors (30).

The propelling machinery will be installed below the lower deck. An SEMT-Pielstick type 6 PC L "father" diesel engine of 2,130 hp output at 425 rpm, built by the Ateliers & Chantiers de Bretagne, drives an ACB controllable-pitch propeller through a Vulcan coupling (32) and reduction gearing (33), together with a 600 kW AC generator (35) which can be used as a "son" for free-running operation. The MAN type G8V-23.5/33 685-hp diesel generator (36) running at 600 rpm can be used to feed the "son" or as an emergency generator. An emergency and port generator (37) of 120 kW output will also be provided, as well as a Ward Leonard motor/generator (38) for winch service. The platform (39) is for the main switchboard (40) and a boiler (41). The engine casing (42) opens to the port side of the upper deck through a skylight (43).

CONVEYOR SYSTEM FOR PLATES

(Continued from page 376)

Fig 3 shows the layout of the new shop rearranged as described.

The production efficiency was improved by more than 30 per cent, an evident proof of the superiority of this new system. The comparison of the shop areas before and after the conversion is shown in Table I.

It will be noted that the areas for gas cutting and other processes were reduced by 20 per cent, but this was due to the elimination of dead space as a consequence of the adoption of a conveyor system and to the systematic arrangement of large machines to suit the flow of materials. In spite of such a reduction in area, the production capacity was increased by nearly 50 per cent, and the

production amount per unit area was doubled.

TABLE I—Comparison of Shop Areas

	Before Conversion, m ²	After Conversion, m ²
Shot-blasting	165	250
Straightening Rolls	690	850
Marking and Gas Cutting of Plate	3,710	2,936
Machines	2,090	1,580
Passageways	630	353
Offcut Storage and Cutting	600	477
Total	7,885	6,446
No 1 Carriage	—	630
Marking and Cutting of Sections	2,120	1,650
Plate Furnace	650	670
Sub-Assembly	2,750	2,614
Passageways	180	423
Grand Total	13,585	12,433

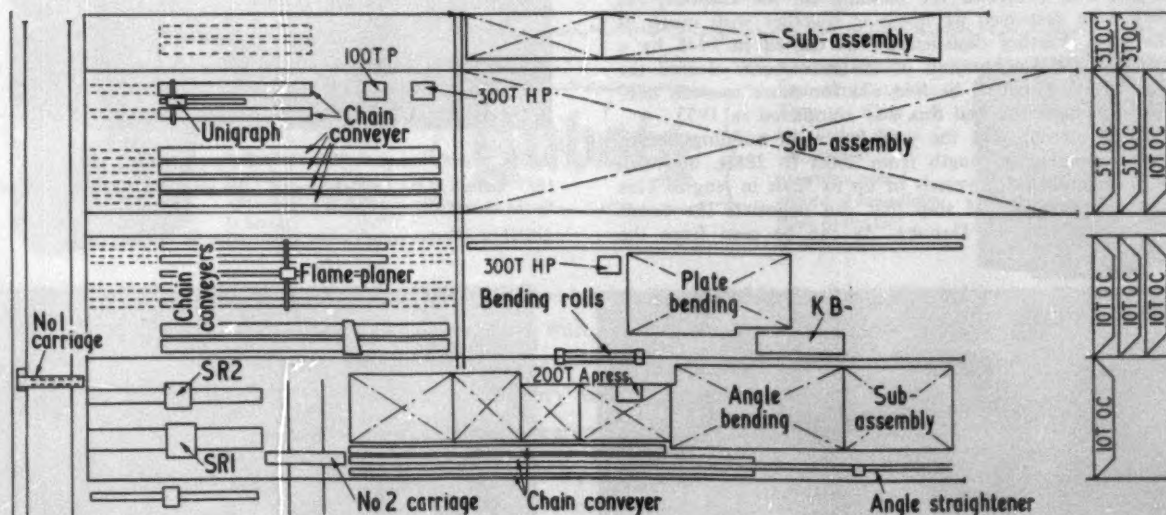


FIG 3. Arrangement of the converted plate and section shop

Shipbuilding in Hungary

OUTPUT OF SMALL VESSELS

LEFT: The Gheorghiu-Dej shipyard at night

HUNGARY is linked with the sea only by the River Danube, and is therefore not ideally situated as a shipbuilding country. However the demand by the U.S.S.R. for ships from East European countries has encouraged the building up of the small yards that existed on the Danube in prewar days, and one—the Gheorghiu-Dej yard—now builds vessels of up to 1,500 dwt. It is also planning to build next year a vessel of 4,000 dwt which will be constructed in sections and assembled at some sea port, probably in Roumania. The Russians placed an order for 106 small vessels of 1,100 dwt with the yard in 1946, and until recently all export work has been for the Soviet Union. However it has recently been exporting vessels to countries of the Middle East and Asia such as the United Arab Republic and Indonesia.

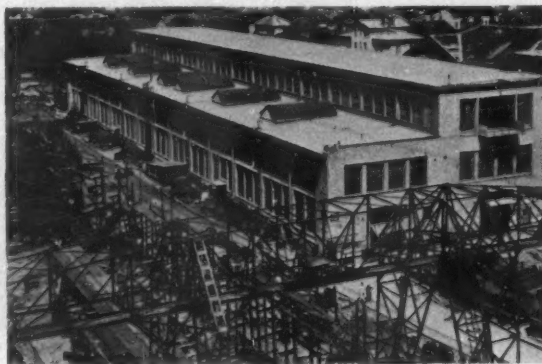
The Gheorghiu-Dej shipyard, which is situated in Budapest, is the main shipyard of Hungary. Before the war it belonged to the well-known firm of Ganz. The history of the firm dates back to 1836, and it launched its first seagoing ship about 100 years later, in 1934. This vessel, the *Budapest*, is still in service on the route between Budapest and Alexandria, and was given a major refit by the builders in 1957. In 1940 the yard had on the stocks two vessels of 3,800 dwt each which were among the largest ever projected for building on the Danube, but they were destroyed by bombing together with much of the yard. Further destruction was caused in 1948 by a fire, but the combination of the two events cleared the way for the yard to be laid out for more modern construction methods, and this was completed in 1953.

In its present state the yard has eight building berths, mostly ranging in length from 200ft to 288ft, but with one accommodating vessels of up to 328ft in length. This is the largest size of ship that can negotiate the bends downstream on the Danube. As can be seen from the

accompanying illustrations, all of which are of the Gheorghiu-Dej yard, vessels are launched sideways into the Danube.

Ships built at the yard are of four standard sizes: 1,100 dwt, 1,200 dwt, 1,300 dwt and 1,400 dwt. All are diesel-powered. They are of welded construction, and quite attractively designed. The labour force at the yard numbers about 3,200. In addition to ships, it also constructs floating cranes and travelling jib cranes.

There are three other yards in Hungary, all of them building smaller craft. Next in size to the Gheorghiu-Dej yard is the Obuda yard, also in Budapest, which has a labour force of 3,100 and builds river passenger vessels.



ABOVE: A new shop at the Gheorghiu-Dej yard

LEFT: Launch of the 1,400-dwt vessel "Om Saber", one of three ordered by the United Arab Republic

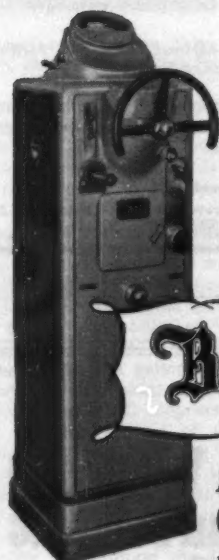
RIGHT: 1,200-dwt vessels under construction for Russia



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A subsig Echo Sounding Recorder Type 301 FF is installed in the wheelhouse to provide a timed record of soundings from 0-570 feet or fathoms.



The Arma—Brown Gyro Compass has been installed in the 'Naieff Yacht' for the Sheik of Qatar and with S. G. Brown steering controls, in the 'Radiant II' for Mr. Basil Mavroleon. A Subsig Echo Sounder is fitted in the fifty knot 'Mercury' for Mr. Stavros Niarchos.

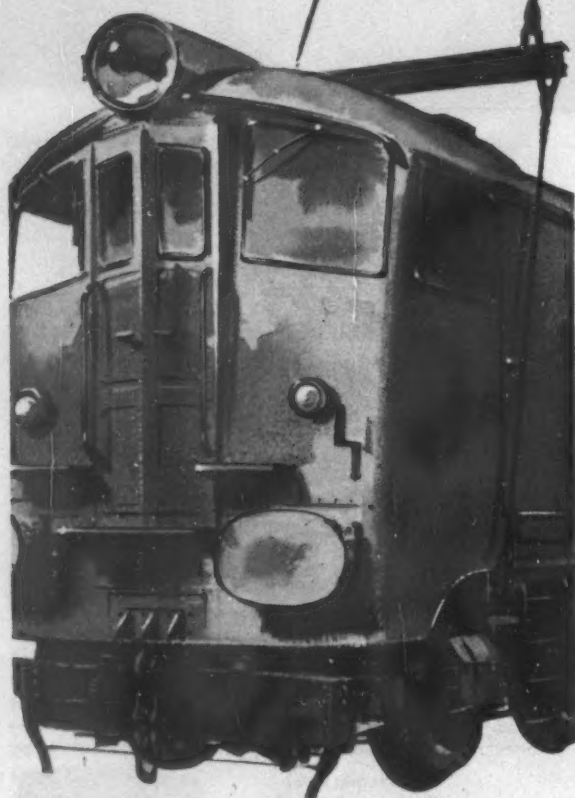
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RECENT TECHNICAL DEVELOPMENTS

Transmitting System for Figures

A RECENT development by S. G. Brown Ltd, Shakespeare Street, Watford, is a digital telegraph known as the Tallygraph. Numbers of up to three digits are set on the Tallygraph transmitter, and these digits are then reproduced on the dials of the receivers, of which there may be any number. Subsidiary transmitters can be included, and when not transmitting these act as receivers. An audio call and reply system is incorporated so that confirmation can be given of receipt of number. The transmitter of the Tallygraph is illustrated here. Numbers are set by the three switches, and the call button is pressed. The receiver is smaller, containing on its face merely the three dials and a reply button. The power required by the system is 4 watts per unit, and this can be taken at 220 volts AC or DC.



Transmitter unit of the Tallygraph, showing the switches for setting the numbers

The Tallygraph could be used for the transmission of engineroom or course orders, quantities of fuel or water, or in any field where the rapid transmission of figures is required. One of the first applications was in the Post Office cable ship *Alert*, completed earlier this year, where it is used to indicate the length of cable paid out and the distance to the next repeater.

Electro-Magnetic Lifting Beam

A RANGE of beams for horizontal and near-vertical lifting, which utilise small electro-magnets, has been designed by Melbro Magnetic Tools Ltd, 2a Alexandra Road, Manchester 15. By the availability of four basic lifting magnets, having capacities of $\frac{1}{2}$, 1, 2 and 3 tons which can be arranged in numerous magnet patterns, plates up to 20 tons of an infinite variety of dimensions can be handled. Switches can be provided to cut-in all magnets or use only groups of magnets. The complete control of all functions of the lifting beam, including rotation, can be carried out from the crane cab. Emergency batteries of a slightly lower voltage are included in the feed circuit, so that in the event of the mains supply or transformer feed failing, current from these batteries will flow into the circuit simultaneously. The batteries are of sufficient capacity to maintain the load for a period of 30 minutes. Arrangements can be made for this equipment to be fitted to any type of crane, as well as fork-lift trucks.

Magnetic Welding Flux Separator

SMALL particles of mill scale are frequently picked up in reclaiming unused flux during submerged arc welding operations. These particles can cause porosity if not removed, and being magnetic they can also be held in the field round the electrode and cause clogging of the flux feed. A new magnetic separator developed by Armco Ltd, 76 Grosvenor Street, London W1, provides a convenient method of removing these particles and avoiding these difficulties. The magnetic separator is similar to a strainer, except that it catches magnetic materials instead of oversize materials. The top portion of the equipment is a cylindrical hopper of 10in diameter and 3in deep. Slots in the bottom permit granular flux to flow through the hopper. Immediately under the slots are solid cylindrical magnets. They resemble rollers and are free to revolve as the flux flows over them. A hinged cover, with slots similar to those in the hopper, fits under the magnets, and retards flux flow to a suitable rate for proper particle removal. Flux is poured into the hopper. The separator then traps any magnetic materials in the flux which flows through it. The magnets attract the material and hold it so that only non-magnetic flux passes through. When the magnets have picked up their full capacity of magnetic particles, the flow through the separator will cease.

The equipment is suitable for any mild steel submerged arc flux and some hardsurfacing fluxes.

New Valor Fire Extinguishers

A NEW range of fire extinguishers has been recently introduced by the Valor Co Ltd, Erdington, Birmingham. One of these is the Valor Foamera foam extinguisher, type E8, for class B risks. It is available in two sizes with one and two gallon capacities. This extinguisher is suitable for use on vehicles, railway rolling stocks, ships and motor boats and has been approved by the Ministry of Transport for marine use. The unit has a copper inner container and a double locking device which seals both inner and outer containers and prevents premature discharge. It has a 30-ft jet and the two-gallon size generates more than ten times its capacity in foam.

Another unit is the Valor gas-water extinguisher, type E9, for class A risks, with a 2-gallon capacity. It is especially suitable for use on furnishings and delicate fabrics. It is capable of simple and rapid operation, can be easily recharged, and has a nozzle and hose extension for directing to awkward positions with a 30 to 40-ft jet.

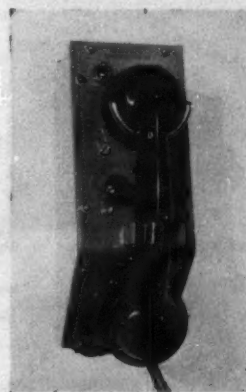
Cordless Electric Lamp

AN ELECTRIC table lamp that needs no cord is manufactured by Onocordo Ltd, of 64a Station Buildings, 115 Moorgate, London EC2. A lamp of this type has obvious potentialities for use on tables in dining saloons or restaurants where tablecloths are used, and a lamp connected through the centre of the table is therefore not convenient. With the Onocordo lamp, the connection with the lamp is made through a transformer. The primary of the transformer is mounted in the table top, beneath the surface covering, and the secondary in the base of the lamp. This system is therefore only suitable for ships in which alternating current is used for the lighting supply. The lamp can be of virtually any design, though the base must be large enough to house the transformer secondary. In a ship, however, a base of this size might in any case be necessary for a free-standing lamp to ensure stability.

Two-Tone Alarm Generator

WHEN the new Merchant Shipping (Radio) Rules which will give effect to the requirements of the 1960 Safety of Life at Sea Convention come into force, those ships which carry radio-telephone equipment under the rules will have to carry an alarm signal generating device. The two-tone radiotelephony alarm signal generator which is already being fitted in many British fishing vessels and small craft by The Marconi International Marine Communication Co Ltd has now been type-approved by the General Post Office. It also fulfils all the requirements of the C.C.I.R. (International Radio Consultative Committee) recommendations. Although there will be some delay before all the authorities concerned bring appropriate regulations into force, the Ministry of Transport has already made a strong recommendation that all United Kingdom ships carrying radiotelephony apparatus should be fitted with alarm generating equipment by 1 January 1962.

The Marconi alarm generator has been designed for speed and simplicity in operation. To use it, the operator starts up the associated transmitter, tuned to the international radiotelephony distress frequency of 2,182 kc/s, switches on the alarm generator with the telephone handset clipped on to it, and pulls the alarm knob. The two-tone signal—alternating tones of 1,300 cycles per second and 2,200 c.p.s., each tone lasting for 250 milliseconds—is transmitted for approximately 30 to 60 seconds and the verbal distress message can then be transmitted by simply disengaging the handset and speaking into it.



The alarm signal generator with the radiotelephone handset clipped in position

NEW CONTRACTS

Shipowners	No. of Ships	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p. (o.a.) x B. x D. (dft.)	Delivery	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
British Methane Ltd	1	Methane carrier	12,000 (gas)	575(618) x 81.5 x 58.5(26)	1964	17.25	Geared turbine	13,750	—	Vickers-Armstrongs, Barrow
British Methane Ltd	1	Methane carrier	12,000 (gas)	575(618) x 81.5 x 58.5(26)	1964	17.25	Geared turbine	13,750	—	Harland & Wolff, Belfast
Clyde Navigation Trust	1	Dredger	—	—	—	—	Tw.-scr. diesel	—	—	Ferguson Bros
Overseas Yards										
Nippon Yusen Kaisha	1	Heavy-lift cargo	10,000 (7,450)	—	—	14	Diesel	5,500	—	Ishikawajima-Harima H.I.
Acklen Shipping Co., Bahamas	1	Timber carrier	15,000	—	1962/12	16.9 (T)	Sulzer diesel	6,600	Shipbuilders	Mitsubishi H.I., Reorganised

LAUNCHES

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p. (o.a.) x B. x D. (dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Nov. 7	Ellerman Lines	City of Eastbourne (165)	Cargo	(10,300)	—	—	Sulzer diesel	—	Shipbuilders	Vickers-Armstrongs, Walker
Overseas Yards										
Sept. 26	Toho Kaiun and Nitsetsu Kisen	Tetsukuni Maru (165)	Bulk carrier	18,800 (12,350)	—	—	M.A.N. diesel	—	Mitsubishi-Yokohama	Nagoya Shipbuilding Co
Sept. 28	Denizcilik Bankasi T.A.O.	Mithat Pasa (545)	Cargo	5,000 (3,800)	328.1 x 49.2 x 27.9	—	Sulzer diesel	3,520	Uruga Dock	Mitsubishi S.B. & E., Shimonoseki
Oct. —	Taiheiyo Kaiun	Seiwa Maru (1562)	Tanker	48,200	—	15.7	U.E.C. diesel	16,500	Shipbuilders	Mitsubishi S.B. & E., Nagasaki
Oct. 1	Yamashita Kisen	Shinko Maru (62)	Cargo	(13,200)	—	—	Diesel	—	—	Kure S.B. & E.
Oct. 5	Denizcilik Bankasi T.A.O.	Namik Kemal (780)	Cargo	7,900 (5,600)	300.33 x 54.33 x 32.67	14	7-cyl Sulzer diesel	4,480	Uruga Dock	Nipponkai H.I.
Oct. 9	Sohgo Kisen	Sohel Maru (137)	Cargo	5,180 (3,350)	—	—	Diesel	—	—	Sasebo H.I.
Oct. 11	Meiwa Kisen	Showa Maru (988)	Tanker	40,200 (24,650)	—	—	M.A.N. diesel	—	Shipbuilders	Kawasaki Dockyard
Oct. 21	Atlantic Bulk Trading Corp	Split (165)	Bulk carrier	22,000 (15,000)	589.5 x 75 x 46.3	—	Fiat diesel	9,450	—	Brodogradiliste Split
Oct. 25	Sverre Blix	Nyco (146)	Cargo	4,475 (3,900)	331.35 x 48.5 x 21.5 (20.7/24.25)	15	7-cyl B & W diesel	4,050	—	Moss Vaerft & Dokk
Oct. 26	Skiba A/S Sydhav (Per Lodding)	Sydhav (774)	Tanker	41,000 (22,000)	648 x 98 x 48.75 (36.4)	16.5 (T)	8-cyl B & W diesel	16,000	Shipbuilders	Burmeister & Wain
Oct. 26	China Union Lines, Taipei	Union Concord (663)	Cargo	12,500 (9,800)	482.3 x 65.7 x 41	18	B & W diesel	12,000	Shipbuilders	Mitsui S.B. & E.
Oct. 27	J. Lauritzen	Ecuadorian Reefer	Refrig. cargo	(4,500)	400 x 59 x 28 (25.75)	—	B & W diesel	—	Burmeister & Wain	Aalborg Vaerft
Oct. 28	V/O Sudimport, Moscow	Lugansk (145)	Tanker	35,000 (22,000)	—	17.7	Sulzer diesel	18,000	Shipbuilders	Mitsubishi S.B. & E., Hiroshima
Oct. 30	Wilh. Wilhelmsen	Torino (539)	Tanker	40,500 (25,500)	(704) x 95 x 49 (36.6)	16.5	12-cyl s/c B & W diesel	15,000	Shipbuilders	Eriksbergs M.V.
Oct. 31	Svenska Lloyd	Dalmatis (1076)	Cargo	4,600 (3,700)	321 x 47.5 x 30.25 (22.5)	15	G.V. diesel	3,000	Shipbuilders	Lindholms Varv
Nov. 1	A. H. Mathiesen, Oslo	Benedicte (1100)	Bulk carrier	22,400 (15,500)	534.75 x 73.5 x 46.6 (33.6)	17.25	M.A.N. diesel	7,200	Shipbuilders	Kieler Howaldtswerke
Nov. —	Empresa Lineas Maritimas Argentinas	Lago Lacar (167)	Cargo	11,000 (7,500)	471 x 64 x 40 (27)	16.5	Diesel	10,300	Fiat	Brodogradiliste "Split"

TRIAL TRIPS

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p. (o.a.) x B. x D. (dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Nov. 1	Bowater Steamship Co	Nina Bowater (530)	Newsprint carrier	5,450 (4,045)	(326) x 50 x 30 (24.1)	12	Sulzer diesel	3,300	Wm. Denny	Caledon S.B. & E.
Nov. 2	Stephenson Clarke	Blanchland (1303)	Cargo	12,830	450 x 62 x 40 (29.6)	15.5	4-cyl t/c Doxford diesel	6,640	Shipbuilders	Wm. Gray & Co
Nov. 2	Bank Line	Weirbank (886)	Cargo	12,030 (8,530)	450 x 62 x 38.5	15.75 (T)	4-cyl diesel	4,800	Shipbuilders	Wm. Doxford & Sons
Nov. 4	Charter Shipping Co., Bermuda	Malwa (1068)	Tanker	37,000	660 (690) x 90 x 48 (36.2)	16.5	Geared turbine	16,000	Shipbuilders	Vickers-Armstrongs, Barrow
Overseas Yards										
Oct. —	Rederi A/B Bifrost	Agne	Cargo	5,540	330 (354) x 50 x 28.4 (22.5)	—	6-cyl s/c B & W diesel	3,450	—	Norrkopings Varv
Oct. —	Kocug Denizcilik Isletmesi	Marmaris I (871)	Cargo	6,250 (4,378)	344.5 x 51.9 x 29.5 (23.42)	—	Two geared diesels	3,780	M.A.N.	A. G. "Weser", Bremerhaven
Oct. —	Supertanker Corp., Monrovia	Samson (206)	Tanker	33,600 (21,400)	628.75 x 86.75 x 46.4 (35.25)	17 (T)	Geared Parsons turbine	15,000	C.E.M.	Ch. Navals de La Ciotat
Oct. 12	A/B Transmarin	Carl Larsson (1068)	Tanker	24,700 (16,150)	575 (610.7) x 76 x (38.4)	15.3 (T)	9-cyl G.V. diesel	8,150	Shipbuilders	Lindholms Varv
Oct. 24	Shinnihon Kinkai Kaiun	Sumoharu Maru (923)	Oru carrier	21,140	—	13.8	Sulzer diesel	7,700	Shipbuilders	Mitsubishi H.I., Reorganised
Oct. 30	Nitcho Shosen	Asia Maru (586)	Tanker	47,500	672.7 (710) x 100 x 52 (38.4)	16	Geared turbine	17,600	Shipbuilders	Ishikawajima-Harima H.I., Aioi
Oct. 31	Marchessini Lines, New York	Eurygenes (878)	Cargo	13,315 (9,655)	488 (534.2) x 62.5 x 40	17	Geared turbine	7,000	Shipbuilders	A. G. "Weser", Bremerhaven
Oct. 31	Anglartys A/B Tirling	Hemland (536)	Tanker	36,600 (22,500)	645 (682.5) x 87.25 x 48.5 (36.5)	16	10-cyl s/c B & W diesel	12,500	Shipbuilders	Eriksbergs M.V.
Oct. 31	Kawasaki Kisen	Tachikawa Maru	Ore carrier	22,082 (13,500)	537.9 x 74.1 x 41	13.5	M.A.N. diesel	7,500	Shipbuilders	Kawasaki Dockyard Co
Nov. 2	Transoceanic Shipping Corp.	Denmark Getty (1500)	Tanker	46,000 (28,700)	(698.9) x 100.1 x 49.9	—	Geared turbine	17,600	Shipbuilders	Mitsubishi S.B. & E., Nagasaki

MARITIME NEWS IN BRIEF

MR D. W. SMITHERS has been appointed Director of Dockyards, Admiralty, in succession to Mr I. E. King who is retiring after 47 years in Admiralty service. Mr Smithers, who is 56, began his career as a shipwright apprentice in Portsmouth Dockyard in 1921. He has held a number of appointments in the Admiralty and in dockyards at home and abroad, including superintendent of welding in the naval construction department.

Mr DAVID McCALL, managing director of Menzies & Co Ltd, of Leith, since 1929, has died aged 77. He was a member of the executive committee of the Dry Dock Owners & Repairers Central Council for many years and was chairman in 1951-52. He served with the Ailsa Shipbuilding Co Ltd and was at one time general manager and subsequently managing director of the Ayrshire Dockyard Co Ltd.

Mr F. T. FARRANT, manager and secretary of the Aberdeen Steam Navigation Co Ltd, has retired after over 46 years' service with the firm.

Mr WILLIAM SHERET, secretary of T. W. Greenwell & Co Ltd, the Sunderland shiprepairers, has completed 60 years' service with the company.

Mr W. J. WEAVER, formerly manager of the Middlesbrough offices of Wm. H. Muller & Co, who retired in the late 1940s, has died. He had twice served as president of the Middlesbrough District Association of Chartered Shipbrokers.

Mr JOSEPH B. MEYER, general manager of the Brooklyn division of Todd Shipyards Corporation, will retire at the end of the year. He will be succeeded by Mr Angel Garate, assistant general manager, who has been with the Todd organisation since 1940. The new assistant general manager will be Mr Joseph A. Kochanczyk.

Mr THOMAS CHARLES MOSS, chief draughtsman of the Canadian Pacific Steamships, has retired after 40 years' service with the company.

THE GOVERNMENT of France has accepted the International Convention for the Safety of Life at Sea, 1960, by depositing an official document to that effect with the Inter-Governmental Maritime Consultative Organisation (IMCO). The convention has already been accepted by Haiti and Norway. The new convention will not come into force until 12 months after 15 acceptances have been deposited. These must include seven countries each with not less than 1 mn grt of shipping.

* * *

PORT COSTS at Liverpool are to go up by 10 per cent from December 2 next. The present surcharge of 25 per cent on dock tonnage and wharf rates on vessels, and town dues on goods, which has been held at that rate since the first half of 1957, will be raised to 37½ per cent. The reduction of 25 per cent from the increased charges in the case of outward coastwise town dues will continue to apply. The surcharge on harbour rates, amounting to 66½ per cent on the schedule rates, will not be increased at present "as among other reasons the whole problem of dredging is under constant review." Capital expenditure on modernisation and reconstruction by the Mersey Docks & Harbour Board over the next five years is estimated at £14 mn.

LORD CRAIGTON, Minister of State at the Scottish Office, recently visited the Clydebank works of Dawson & Downie Ltd as a mark of appreciation for their contribution to the export drive. This firm regularly exports between 65 and 70 per cent of its pump production. Both reciprocating and centrifugal

SHIPBUILDING EMPLOYERS' NEW OFFICE BEARERS



Mr Cyril Thompson

Mr R. Cyril Thompson was elected president and Dr Denis Rebbeck senior vice-president of the Shipbuilding Employers' Federation at the annual meeting in Edinburgh last week. The new vice-president is Mr George Morrison, managing director of the Greenock Dockyard Co Ltd, while Mr Henry Robb, chairman and managing director of Henry Robb Ltd, will be serving a second year as vice-president. Mr Thomas McIver, a director and general manager of Swan, Hunter & Wigham Richardson Ltd, succeeds Mr George Hilton as chairman of the Conference and Works Board and the new vice-chairman of the board is Mr Thomas Parnell, a director and shipyard manager of the Caledon Shipbuilding & Engineering Co Ltd. The retiring president of the Federation is Mr John Rannie, shipyard director of John Brown & Co (Clydebank) Ltd. The new president became a director of Joseph L. Thompson & Sons Ltd in 1931 and succeeded his father as chairman 10 years ago. Dr Denis Rebbeck, the new senior vice-president, is deputy managing director of Harland & Wolff Ltd, Belfast, of which he has been a director since 1946. Mr McIver served his apprenticeship at the Wallsend shipyard but filled various appointments with Bartrams, Hall Russell and Fairfields before returning to Swan Hunters as shipyard manager in 1954. Mr Parnell was with Vickers-Armstrongs until 1953 when he joined his present company, becoming a director in 1955.



Dr Denis Rebbeck



Mr Henry Robb



Mr George Morrison



Mr Thomas McIver



Mr Thomas Parnell

pumps are supplied to many European shipyards for general steam and water services, cargo oil service, and tank stripping.

MR WILLIAM T. MITCHELL, chairman of T. L. Duff & Co Ltd has died. He joined the firm as chartering manager in 1908 and became a partner in 1919. He was sole partner from 1930 until the firm was made into a limited company in 1948, when he was elected chairman.

THE ST LAWRENCE Seaway Authority has announced that, weather and ice conditions permitting, the Sault Ste Marie canal will be kept open until December 12, the Welland canal until December 15 and the other Seaway canals, including the Beauharnois and Iroquois, until November 30.

THE Norsk Marconikompani A/S, Norwegian associate of The Marconi International Marine Communication Co Ltd, has received the order for the complete radio communication and navigational aid installation for Norway's first factory trawler. The vessel, building at the Alesund yard of A. M. Liaaen, will be a stern trawler of 850 grt and Norway's largest fishing vessel.

THE WEST AFRICAN Lines Conference announce that no change will be made in current timber tariff rates on January 1 next. Barring exceptional circumstances, these rates will remain in force until 30 June 1962.

WM. H. MULLER & Co (London) Ltd have been appointed shipping brokers in the United Kingdom for the Continental service of the Shipping Corporation of India Ltd, the new organisation formed by the amalgamation of the Eastern and the Western Shipping Corporations.

* * *

IMPROVEMENTS AT MORMUGAO are announced by the Goan Port Administration, which took over control of the port last April from the West of India Portuguese Guaranteed Railway Co Ltd. Three new piers with mechanical loading gear are to be provided, large stocking areas are to be reclaimed from the sea and the entrance channel is to be dredged. A new suction dredger has been ordered from Holland and two tugs are being built for the administration in Poland. Provision of improved lighting for leading-lights, mooring buoys and quays is under study and orders are expected to be placed this year.

THE B.T.C. VESSEL *St Patrick* took on board the first cargo of cattle to be shipped from Sheerness harbour, the former dockyard now operated by the Sheerness Harbour Company. About 170 head of cattle were loaded for Antwerp in a non-tidal berth from pens converted from a plating shop.

THE MAXIMUM length for ships loading iron ore at Vitoria, Brazil, was increased recently from 182 to 205 metres (672ft 8in), but the authorisation is at present largely theoretical as it is dependent on the services of a 1,000 hp tug not yet available. Maximum draught at the port remains at 36ft.

THE BRAZILIAN Minister of Transport has signed a contract for the construction of a new port at Campinho, in the south of the State of Bahia, to provide an outlet for products of the interior, especially iron ore. Scheduled for completion in two years, it will have 150 metres of docks suitable for vessels of up to 12m draught, according to the Bank of London & South America Ltd.

THE IRISH VEROLME enterprise, Verolme Cork Dockyard Ltd, will have its first launching on December 5. A cargo vessel of 15,000 dwt, for Irish Shipping Ltd, she will be named *Irish Rowan* by Mrs de Valera, wife of the President of Eire. The keel was laid in October 1960.

PERMISSION HAS been granted for an air service between Swansea and Birmingham to be operated by Morton Air Services Ltd. This follows the dismissal by the Minister of Aviation of an appeal by the British Transport Commission against the grant of a licence to Morton by the Air Transport Licensing Board.

POLISH SHIPS carried nearly 3 mn tons of cargoes during the first six months of this year, representing an increase of 21 per cent compared with the same period of 1960, according to *Polish Maritime News*.

A \$3 MN SCHEME for widening and deepening the Fraser River ship channel to the British Columbia port of New West-

minster has been approved by the Canadian Government. It is expected to take about three years to complete. The channel depth will be increased to a minimum of 30ft.

OVER 175,000 overseas visitors came to Britain in September, according to the British Travel & Holidays Association, bringing the total for the first nine months of the year to just over 1½ mn, an increase of 9 per cent on the same period last year.

MARTIN, BLACK & Co (Wire Ropes) Ltd, of Coatbridge, Glasgow, have recently combined their North-West area office and depot at enlarged premises at the depot address, 99a Webster Road, Liverpool 7. The depot telephone number remains Sefton Park 6669, but the office number is now Sefton Park 7556.

* * *

A REVISED British Standard specification for fibreboard drums for overseas shipments (B.S.1956:1961) has been published. The revision makes two major changes from the 1953 edition. Firstly, dimensional requirements have been replaced by a specification of the relationship between height and diameter of the end. Secondly, there has been considerable change in the basis of specifying the drop test, the tests in earlier editions having been found to be more severe than is normally justified by present conditions.

BENNIS THERMOFLASH LTD, designers and manufacturers of flash type sea water distillation plant, have appointed Wm. H. Müller & Co (London) Ltd, Custom House & Wool Quays, Lower Thames Street, London EC3, as marine sales representatives for the United Kingdom and Ireland.

A NEW SHIP of about 8,000 tons is to be built for the Wellington-Lyttelton steamer express service linking the North and South Islands of New Zealand. She will replace the *Rangatira*, built in 1931, which is now the relief steamer for her two bigger and younger consorts *Hinemoa* and *Maori*. The replacement is not planned for the immediate future.

Chamber of Shipping statistics show that on October 1 ships laid-up at ports in Great Britain and Ireland for reasons other than repair totalled 59 of 344,178 grt. Of this total 52 of 287,458 tons were British and seven of 56,720 tons were foreign. Vessels laid-up while awaiting or undergoing repair totalled 51 of 292,294 grt. Of this total 45 of 244,058 tons were British and six of 48,236 tons were foreign.

FIFTY YEARS AGO

From THE SHIPPING WORLD of 15 November 1911

On Saturday afternoon Messrs. Barclay, Curle & Co., Whiteinch, launched the twin-screw oil-engined vessel *Jutlandia*, built to the order of the East Asiatic Company of Copenhagen. This novel vessel is 384 ft. in length, 53 ft. 3 in. in breadth, 30 ft. in depth, 23 ft. 6 in. in draught, of 10,000 tons displacement, 7,000 tons d.w., and 5,000 tons gross. She will be supplied by the builders with two sets of Diesel oil engines capable of developing 3,000 i.h.p. She will have three masts, and the fumes from the engine room will be led up inside the mizenmast and exhausted at a height of 48 ft. above the decks, so that a funnel is not required. It is expected that the *Jutlandia* will run trials next month.

The latest, and in many respects the best unit of the Orient Line fleet to be constructed under the mail contract made by the Australian Government with this well-known shipping company, left London on Friday last on her maiden voyage to Australia. The Commonwealth mail contract to which we have alluded became operative only last year, but already the Orient Line has been strengthened and enriched by the addition of six splendid steamers, aggregating 73,456 tons register. Built at Clydebank by Messrs. John Brown & Co. Ltd., specially to meet the requirements of the Australian voyage, the *Orama* is a triple-screw vessel of approximately 13,000 tons register, her dimensions being 569 ft. long by 64.3 ft. wide, with a depth from top of charthouse of 84.6 ft. She has accommodation for 450 first and second-class passengers, and about 800 third-class passengers.

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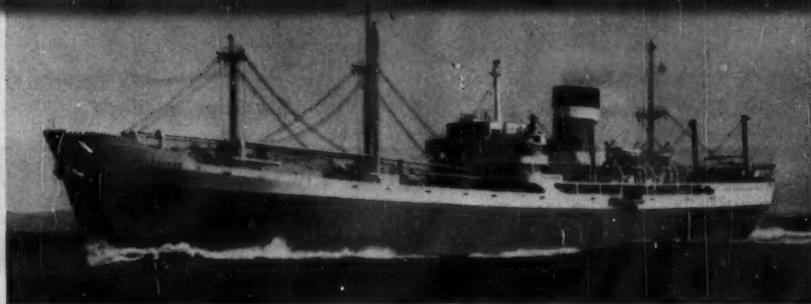
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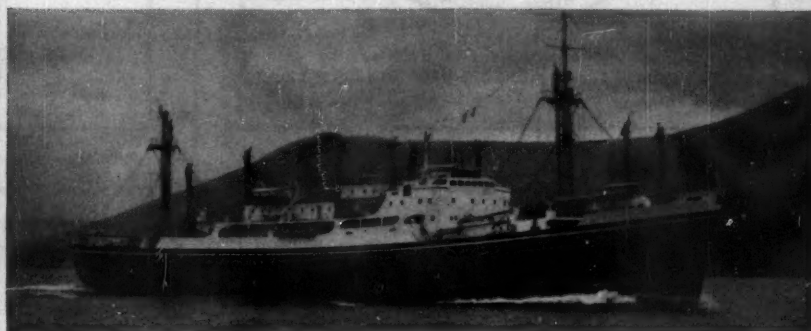


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Photograph by courtesy of W. Ralston Ltd. Glasgow.

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& Sons Glasgow.



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Owners: Shaw Savill & Albion Co. Ltd.

Photograph by courtesy of W. Ralston Ltd. Glasgow.

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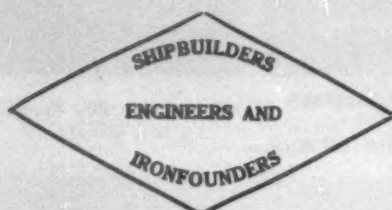
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PORT DISBURSEMENT ACCOUNTS

DETAILS OF EXPENDITURE IN VARIOUS PORTS

With the assistance of correspondents of PORTS OF THE WORLD (published annually), THE SHIPPING WORLD is able to publish the following selection of recent disbursement accounts from various ports of the world:

AVONMOUTH, U.K.

Size of vessel: 3,799 nrt

From: Philadelphia

Discharged: 7,646 tons of wheat in bulk

	£	s	d
Pilotage	84	16	10
Dock pilot	6	3	9
Towage	205	0	0
Light dues	209	0	10
Dock dues	842	15	6
Boatmen, etc	21	15	10
Cost of discharge	764	7	2
Agency fee	75	0	0
	£2,208	19	11

Tanker with full cargo of spirit from Trinidad

	£	s	d
Pilotage	113	0	7
Dock pilot	10	14	0
Towage	366	15	0
Light dues	388	17	8
Dock dues	1,045	4	4
Boatmen, etc	28	2	2
Special watching	5	4	0
Agency fee	52	10	0
	£2,010	7	9

From: James & Hodder, P.O. Box 107, 10 Queen Square, Bristol 1. Cables: James Bristol.

DAKAR, Senegal

Vessel loading 3,352,800 kilos of oilcakes in bulk

Time in port: 2½ days

	CFA fr
Pilotage	8,543
Watching service	3,552
Customs dues	3,182
Clearance	1,200
Motor car hire	3,500
Telegrams, postage, Customs stamp	7,685
Agency fee (£57 10s)	39,744
Commission on cash disbursements	1,006
	CFA fr 68,412

Vessel taking on 183 tons of diesel oil bunkers

Time in port: 3½ hours

	CFA fr
Pilotage	2,847
Watching service	353
Motor car hire	1,500
Telegrams, postage, etc	2,142
Agency fee (£35 13s)	24,641
Commission on cash disbursements	766
	CFA fr 32,249

From: Cie Commerciale Franco-Scandinave, P.O. Box 279, Dakar, Senegal. Cables: Fradois-Dakar.

U.S. GREAT LAKES PORTS

MILWAUKEE, Wis.

Size of vessel: 4,257 nrt, 6,952 grt

From: Montreal in ballast Sailed for: Genoa

Loaded: 8,530 long tons of scrap

Time in port: 13 days

Date: June 1961

	\$
Pilotage	183.50
Towage	972.90
Bureau of Customs	260.62
Telegrams, postage, petties, etc	108.59
Scavenger service	45.00
Agency fee	470.00
	\$2,040.61

Size of vessel: 4,413 nrt, 7,119 grt

From: Chicago Sailed for: Rouen

Loaded: 8,515 tons of scrap

Time in port: 15 days

Date: June 1961

	\$
Pilotage	30.00
Towage	850.86
Dockage	198.45
Bureau of Customs	2.50
Scavenger service	51.00
Guard service	770.80
Telegrams, telephone, etc	55.00
Agency fee	530.00
	\$2,488.61

CHICAGO, Ill.

Size of vessel: 3,382 nrt, 6,157 grt

From: Montreal Sailed for: Duluth

Loaded: 4,136 tons of animal oils

Time in port: 11 days

Date: May 1961

	\$
Towage	565.00
Mooring/unmooring/delay charges	3,068.11
Dockage	1,231.60
Bureau of Customs	22.84
Dept. of Agriculture	10.08
National Cargo Bureau Inc	90.00
Tank cleaning	4,277.24
Transportation	41.75
Telegrams, postage, petties, etc	456.09
Brokerage—freight forwarders	586.25
Agency fee	700.00
Commission	706.52
	\$11,755.48

Size of vessel: 3,592 nrt, 6,157 grt

From: Montreal Sailed for: Duluth

Loaded: 1,777 tons of palm kernel oil

Time in port: 11 days

Date: May 1961

	\$
Towage	731.50
Bureau of Customs	257.08
Immigration service	65.20
Dept. of Agriculture	29.00
Cost of squeegeeing	91.20
	\$1,173.98

(Continued on next page)

PORT DISBURSEMENT ACCOUNTS

(Continued from previous page)

U.S. GREAT LAKES PORTS (contd.)

DETROIT, Mich.

Size of vessel: 1,990 nrt, 3,984 grt
 From: Montreal Sailed for: Bremen
 Loaded: 4,682 tons of scrap
 Time in port: 5 days
 Date: July 1961

	\$
Towage	878.58
Wharfage	205.95
Bureau of Customs	65.15
National Cargo Bureau Inc	53.00
Telegrams, postage, petties, entry bond	98.95
Guard service	41.60
Agency fee	875.00
	<hr/>
	\$2,218.23

From: Midland Overseas Shipping Corporation, Lake Calumet Harbor Drive, Chicago 33, Ill., U.S.A. Cables: Midover. Telex: 02-5236.

EMDEN, West Germany

Size of vessel: 5,269 nrt, 9,122 grt
 From: Hampton Roads Sailed for: Sweden in ballast
 Discharged: 11,975 tons of coal
 Time in port: 6 days

	DM
Pilotage, in and out	1,511.00
Towage	2,346.87
Harbour dues	3,679.40
Boatmen	243.00
Lifeboat Institution	33.20
Sailor's Home & Mission	18.45
Extra discharging expenses	493.75
Water	396.00
Boat hire	45.00
Telephones, telegrams, postage, petties, etc	74.60
Agency fee	1,050.00
	<hr/>
	DM 9,891.27

Size of vessel: 7,046 nrt, 10,061 grt
 From: Rio de Janeiro Sailed for: West Africa in ballast
 Discharged: 14,530 tons of iron ore
 Time in port: 5 days

	DM
Pilotage, in and out	1,521.00
Towage	2,754.00
Harbour dues	1,948.60
Boatmen	199.15
Lifeboat Institution	30.00
Sailors' Home & Mission	25.00
Telegrams, telephones, postage, petties, etc	60.80
Agency fee	1,280.00
	<hr/>
	DM 7,818.55

Size of vessel: 5,769 nrt, 9,957 grt
 Discharged: Part cargo of 2,961,000 kilos of diesel oil
 Sailed for: Netherlands with remainder of cargo
 Time in port: 1 day

	DM
Pilotage (incl. coastal DM 735.00)	2,265.00
Towage	3,675.00
Harbour dues	1,331.00
Boatmen	135.00
Sailors' Home & Mission	20.20
Telegrams, telephones, petties, etc	23.40
Agency fee	350.00
	<hr/>
	DM 7,799.60

(Continued in next column)

EMDEN (contd.)

Size of vessel: 1,197 nrt, 2,036 grt
 From: Netherlands in ballast Sailed for: Aviles
 Loaded: 1,900 tons of coke

	DM
Pilotage, in and out	482.00
Towage	712.50
Harbour dues	311.00
Trimming expenses	2,906.05
Lifeboat Institution and Sailors' Home	10.20
Boatmen	52.50
Telephone, telegrams, petties, stamps	55.00
Agency fee	325.00
	<hr/>
	DM 4,854.25

From: Mundy Schiffahrtsagentur GmbH, Ringstrasse 2, Postbox 349, Emden, Germany. Cables: Mundico. Telex: 027 805.

La ROCHELLE-PALLICE

Size of vessel: Tanker 6,296 nrt
 From: Baytown Sailed for: Aruba in ballast
 Discharged: 14,879 tons of gasoline

	Nfr
Pilotage, in and out	1,653.98
Shifting and boatmen	203.48
Towage, in and out	4,995.03
Quay dues	20,008.59
Town dues	7,380.08
Customs overtime and permit	33.60
Hire of hawsers	257.65
Safety inspection	65.00
Consular fees and Immigration service	11.00
Salvage Association	3.00
Maritime & Commercial Federation tax	12.59
Telegrams, telephone, postage and petties	287.91
Brokerage inwards	853.68
Agency fees	577.50
Local tax	24.16
	<hr/>
	Nfr 36,367.25

Size of vessel: 272 nrt
 From: Workington in ballast Sailed for: Belfast
 Loaded: 720 tons of barley

	Nfr
Pilotage, in and out	223.26
Shifting and boatmen	67.44
Quay dues	144.20
Town dues	319.95
Local taxes and fees	7.03
Immigration service	5.00
Telegrams, postage etc.	77.45
Brokerage	193.04
Agency fees	214.50
	<hr/>
	Nfr 1,251.87

Size of vessel: 254 nrt
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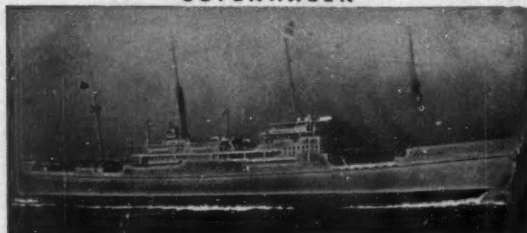
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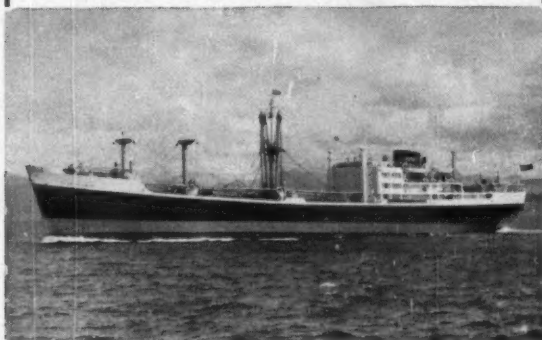
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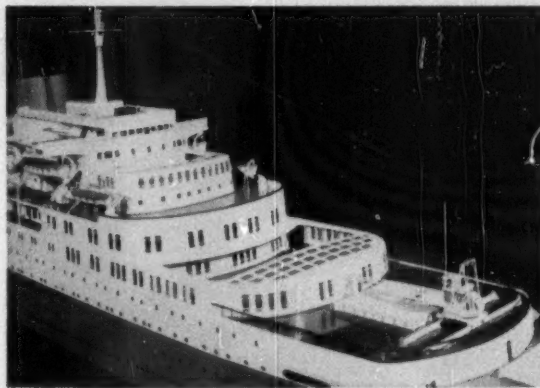
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